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MEASUREMENTS OF A HELICOPTER WIND-TUNNEL
MODEL WITH A 3.15-METER DIAMETER SINGLE
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FUSELAGE SURFACE PRESSURE MEASUREMENTS OF A HELICOPTER WIND-TUNNEL MODEL WITH A 3.15-METER DIAMETER SINGLE ROTOR

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SUMMARY

A wind-tunnel investigation has been conducted to measure the time-averaged fuselage surface pressures of a helicopter model with a 3.15-meter diameter, four-bladed articulated rotor. Measurements were made at hover and advance ratios of 0.05, 0.15, and 0.20 for a range of thrusts. Data are presented with no analysis.

INTRODUCTION

The downwash induced by a rotor on a helicopter fuselage and its empennage generally produces an effect on the overall vehicle performance. These effects are generally most evident in hover and low-speed flight as fuselage downloads and yawing moments. The flow around the fuselage has a secondary effect of inducing nonuniform downwash through the rotor disk.

The purpose of this investigation was to expand the data base required to validate analytic models of the flow field around a rotorcraft fuselage. Most comparisons to this date have used the results of reference 1 which presents surface pressures of three helicopter models with 1-meter, 2-bladed diameter rotors. This paper presents data for a general fuselage configuration with a 3.15-meter, 4-bladed rotor system.

No analysis of the data is presented as the purpose of this paper is to provide experimental data for future analytical analyses.

SYMBOLS

Units used for physical quantities defined in this paper are given in the International System of Units (SI). The positive senses of parameters are shown in figures 1(a) and 1(b).

a_0	coning angle, deg
a_{1s}	first-harmonic rotor longitudinal flapping angle, deg
A_1	lateral cyclic control, deg
b	number of blades
b_{1s}	first-harmonic rotor lateral flapping angle, deg
B_1	longitudinal cyclic control, deg

c	blade chord, m
C_p	pressure coefficient, $(p-p_\infty)/q_\infty$ forward flight, $(p-p_\infty)/1.0$ hover
C_Q	rotor torque coefficient, $Q/\rho_\infty (\Omega R)^2 \pi R^3$
C_T	rotor thrust coefficient, $T_R/\rho_\infty (\Omega R)^2 \pi R^2$
D	drag, N
h/D	height of rotor above test section floor/ $2R$
H	height of body/ R
H_R	rotor drag force, N
h_h	height of hub above gimbal pivot point, cm
L	lift, N
N	ellipse power
P	pressure, Pa
P_∞	free-stream static pressure, Pa
q_∞	free-stream dynamic pressure, Pa
Q	rotor torque, N-m
r	polar coordinate/ R
R	rotor radius, m
T_R	rotor thrust, N
V_∞	free-stream velocity, m/sec or knots as noted
X, Y, Z	cartesian coordinates, cm
X_S, Z_S	distance from moment reference center of gimbal pivot point, cm
Y_R	rotor side force, N
α	angle of attack, deg
β	angle of sideslip, deg
γ	rotor shaft tilt angle, deg
μ	advance ratio, $V_\infty/\Omega R$

ρ_{∞}	free-stream air density, kg/m
σ	rotor solidity, $bc/\pi R$
ϕ	polar coordinate, deg
ψ	blade azimuth position
Ω	rotor rotational speed, rad/sec

Notation:

HP	hub plane
NFP	no feathering plane
TPP	tip path plane
RPM	revolutions per minute

Subscripts:

F	fuselage
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MODEL AND APPARATUS

The general rotor model system (GRMS) was used in the Langley V/STOL tunnel for this investigation. A sketch of the model is presented in figure 1, and a photograph of the model in the test section is presented as figure 2. Details of the model may be found in reference 2.

The rotor hub used in the investigation was fully articulated. The flapping and lagging hinges were coincident at the 4.8 percent radius. The pitch-flap coupling angle was set at -2° . Position potentiometers were mounted on the flapping and lagging hinges of the reference blade to provide a measure of the flapping and lagging motions. Strain gages were mounted on the pitch link of the reference blade to measure the control loads. The rotor was driven by twin 67 kW (90 h.p.) electric motors driving a common transmission. The rotor, transmission, and motor assembly were mounted on a six-component strain-gage balance. The balance was supported by a gimbal system of springs and dampers to insure that the rotor would be free from ground resonance.

The rotor blades had -8° twist and an untapered planform. One blade was equipped with externally mounted strain gages. Spanwise wiring to the gage was run internally. However, at the four radial positions of the gages, the instrumentation wire was run externally in a chordwise direction. Further details of the rotor blades may be found in table 1.

The fuselage shape is mathematically derived from super-ellipse equations. For a given fuselage station (X), the cross section (Y and Z coordinates) is

defined by the height (H), width (W), camber line (ZO), and elliptical power (N).

A super ellipse is defined by the elliptical equation

$$\left(\frac{x + x_0}{A}\right)^n + \left(\frac{y + y_0}{B}\right)^m = C \quad (1)$$

where n and m are not necessarily equal to two or equal to each other, and A , B , C , x_0 , and y_0 are arbitrary constants. By solving for y as a function of x (i.e., $y = F(x)$), equation (1) becomes

$$y = F(x) = B \left(C - \left(\frac{x + x_0}{A}\right)^n \right)^{\frac{1}{m}} - y_0 \quad (2)$$

Making the substitutions $m = C_8$; $y_0 = -C_6$; $B = C_7$; $C = C_1$; and $X = x$ and by expanding the term

$$- \left(\frac{x + x_0}{A}\right)^n \quad (3)$$

to

$$+ C_2 \left(\frac{X + C_3}{C_4}\right)^{C_5} \quad (4)$$

equation (2) becomes

$$F(X) = C_6 + C_7 \left[C_1 + C_2 \left(\frac{X + C_3}{C_4}\right)^{C_5} \right]^{\frac{1}{C_8}} \quad (5)$$

Equation (5) is then used to calculate H , W , ZO , and N as a function of X by selection of an appropriate set of constants C_1 through C_8 (Table II).

The cross section at the fuselage station X can then be defined by a polar coordinate (r, ϕ) form of equation (1) with

$$y + y_0 = r \cos \phi \quad (6)$$

$$x + x_0 = r \sin \phi \quad (7)$$

and the constant relations $C = 1$ and $n = m = N$. Thus equation (2), solving for r , becomes

$$r = \left[\frac{(A \cdot B)^N}{(A \sin)^N + (B \cos)^N} \right]^{\frac{1}{N}} \quad (8)$$

Therefore, the body cartesian coordinates may be obtained for $\phi = 0$ to 2π by using equation (8) and substituting $A = H/2$, $B = W/2$, and N obtained from function (3) to determine r . The cartesian coordinates Y and Z are then calculated using $Y = r \sin\phi$ and $Z = r \cos\phi + Z_0$ where Z_0 was obtained using function (3). As shown in figure 3, the body is divided into four regions and the pylon into two regions with a set of constants for each region.

One hundred seventy-six orifices were located on the body. The cartesian coordinates of these orifices are listed in table III.

Body pitch angle was measured by instrumentation inside the model while sideslip angles were calculated based upon the joint positions of the V/STOL alpha-beta sting assembly. Surface pressures were measured by six pressure transducers as the orifices were mechanically scanned.

TEST CONDITIONS AND CORRECTIONS

This investigation was conducted in the Langley V/STOL tunnel, which is a closed-return, atmospheric tunnel. The tunnel test section, which measures 4.42 m by 6.63 m, was operated in two modes: (1) with the walls and ceiling removed for an advance ratio μ of 0.05 and in hover; and (2) with a closed test section for advance ratios of 0.15 and 0.20. All tests were conducted with the moment reference center of the model on the center line of the test section. This position corresponds to $h/D = 0.92$.

Angle-of-attack and sideslip sweeps were made using the alpha-beta sting. No sting corrections were made. Angle of attack and tunnel dynamic pressure were corrected using methods described in reference 3.

Force data were averaged for 100 samples over 10 seconds. Pressure data were averaged for 50 samples over 5 seconds with 0.8 second allowed for settling time between orifice scan steps.

Test conditions for various run and point numbers are listed in table IV.

PRESENTATION OF DATA

Data are presented as figure 4. Pressure coefficients, C_p , are plotted for 14 fuselage stations at each test condition listed in table IV. Orifice coordinates can be found in table III. Listings of C_p for each test condition is provided in the appendix.

REFERENCES

1. Wilson, John C.; and Mineck, Raymond E.: Wind-Tunnel Investigation of Helicopter-Rotor Wake Effects on Three Helicopter Fuselage Models. NASA TM X-3185, 1975
2. Mineck, Raymond E.; and Freeman, Carl E.: Aerodynamic Characteristics of a 1/6-Scale Powered Model of the Rotor Systems Research Aircraft. NASA TM X-3489, 1977
3. Heyson, Harry H.: Use of Superposition in Digital Computers to Obtain Wind-Tunnel Interference Factors for Arbitrary Configurations, With Particular Reference to V/STOL Models. NASA TR R-302, 1969

TABLE I.- MODEL GEOMETRY

Fuselage:

Moment Reference Center	$X = 0.690R$
	$Y = 0.0 \ R$
	$Z = 0.0 \ R$
Length	$2.0 \ R$

Rotor:

Hub Coordinates	$X = 0.690R$
	$Y = 0.0 \ R$
	$Z = 0.124R$
Number of Blades	4
γ	2 deg
X_s	$0.009R$
Z_s	$0.034R$
h_h	$0.090R$
Root Cutout	$0.20R$
Chord	$.108m$
Radius	$1.574m$
Twist	-8.0°
Flapping Inertia	$0.653 \text{ Kg} - m^2$
Solidity	0.0871
Airfoil Section	NASA RC-10-(B) M002

TABLE II

(a) Fuselage Parameters

Function	X/R	C ₁	C ₂	C ₃	C ₄	C ₅	C ₆	C ₇	C ₈
H	0 → 0.4	1.0	-1.0	-.4	0.4	1.8	0	0.25	1.8
W		1.0	-1.0	-.4	.4	2.0	0	.25	2.0
ZO		1.0	-1.0	-.4	.4	1.8	-.08	.08	1.8
N		2.0	3.0	0	.4	1.0	0	1.0	1.0
H	0.4 → 0.8	0.25	0	0	0	0	0	0	0
W		.25	0	0	0	0	0	0	0
ZO		8.0	0	0	0	0	0	0	0
N		5.0	0	0	0	0	0	0	0
H	0.8 → 1.9	1.0	-1.0	-.8	1.1	1.5	0.05	0.2	0.6
W		1.0	-1.0	-.8	1.1	1.5	0.05	0.2	0.6
ZO		1.0	-1.0	-.8	1.1	1.5	.04	-.04	0.6
N		5.0	-3.0	-.8	1.1	1.0	0	0	0
H	1.9 → 2.0	1.0	-1.0	-1.9	0.1	2.0	0	0.05	2.0
W		1.0	-1.0	-1.9	0.1	2.0	0	.05	2.0
Zφ		0.04	0	0	0	0	0	0	0
N		2.0	0	0	0	0	0	0	0
(b) Pylon Parameters									
H	0.4 → 0.8	1.0	-1.0	-.8	0.4	3.0	0	0.2	3.0
W		1.0	-1.0	-.8	0.4	3.0	0	0.172	3.0
ZO		0.122	0	0	0	0	0	0	0
N		5.0	0	0	0	0	0	0	0
H	0.8 → 1.018	1.0	-1.0	-.8	0.218	2.0	0	0.2	2.0
W		1.0	-1.0	-.8	.218	2.0	0	0.172	2.0
ZO		1.0	-1.0	-.8	1.1	1.5	.065	0.06	0.6
N		0.122	0	0	0	0	0	0	C

TABLE III. - ORIFICE COORDINATES

STRIP	ORIFICE	X/R	Y/R	Z/R
1	1	.0517	.0070	.0064
1	2	.0517	.0353	-.0005
1	3	.0516	.0558	-.0231
1	4	.0516	.0595	-.0541
1	5	.0517	.0475	-.0826
1	6	.0518	.0212	-.0969
2	7	.0941	.0097	.0387
2	8	.0941	.0294	.0366
2	9	.0942	.0491	.0300
2	10	.0941	.0656	.0167
2	11	.0940	.0755	-.0021
2	12	.0940	.0791	-.0231
2	13	.0940	.0791	-.0442
3	14	.1451	.0120	.0667
3	15	.1452	.0367	.0648
3	16	.1452	.0617	.0571
3	17	.1451	.0817	.0402
3	18	.1451	.0923	.0159
3	19	.1450	.0954	-.0100
3	20	.1450	.0954	-.0355
4	21	.2007	.0136	.0892
4	22	.2007	.0721	.0792
4	23	.2007	.1054	.0303
4	24	.2006	.1077	-.0284
4	25	.2007	.0948	-.0870
4	26	.2007	.0426	-.1154
5	27	.2562	.0152	.1056
5	28	.2563	.0470	.1042
5	29	.2563	.0799	.0957
5	30	.2563	.1045	.0731
5	31	.2562	.1145	.0406
5	32	.2561	.1162	.0080
5	33	.2561	.1162	-.0231
6	34	.3074	.0160	.1162
6	35	.3074	.0499	.1150
6	36	.3074	.0852	.1066
6	37	.3074	.1106	.0822
6	38	.3074	.1200	.0471
6	39	.3073	.1213	.0128
6	40	.3073	.1213	-.0197
7	41	.3498	.0165	.1220
7	42	.3499	.0882	.1126
7	43	.3498	.1229	.0506
7	44	.3498	.1239	-.0178
7	45	.3499	.1141	-.0896
7	46	.3498	.0515	-.1234

TABLE III. - CONTINUED

STRIP	ORIFICE	X/R	Y/R	Z/R
8	47	.4669	.0901	.1162
8	48	.4669	.1162	.0901
8	49	.4669	.1243	.0524
8	50	.4669	.1250	.0168
8	51	.4669	.1250	-.0168
9	52	.6003	.0901	.1162
9	53	.6003	.1162	.0901
9	54	.6003	.1243	.0524
9	55	.6003	.1250	.0168
9	56	.6003	.1250	-.0168
10	57	.8809	.0870	.1138
10	58	.8809	.1123	.0885
10	59	.8810	.1205	.0523
10	60	.8810	.1213	.0177
10	61	.8810	.1213	-.0148
11	62	1.0007	.0796	.1081
11	63	1.0008	.1109	.0520
11	64	1.0009	.1119	-.0097
11	65	1.0007	.1029	-.0744
11	66	1.0008	.0467	-.1056
12	67	1.1621	.0128	.1071
12	68	1.1619	.0396	.1059
12	69	1.1618	.0669	.0985
12	70	1.1618	.0866	.0789
12	71	1.1619	.0941	.0515
12	72	1.1621	.0953	.0247
12	73	1.1621	.0953	-.0009
12	74	1.1619	.0941	-.0277
12	75	1.1618	.0866	-.0551
12	76	1.1618	.0669	-.0747
12	77	1.1619	.0396	-.0822
12	78	1.1621	.0128	-.0834
13	79	1.3460	.0099	.0943
13	80	1.3453	.0510	.0865
13	81	1.3453	.0726	.0509
13	82	1.3460	.0739	.0105
13	83	1.3453	.0661	-.0306
13	84	1.3453	.0305	-.0522
14	85	1.5307	.0070	.0816
14	86	1.5300	.0355	.0749
14	87	1.5300	.0513	.0503
14	88	1.5307	.0527	.0219
15	89	.0517	-.0070	.0064
15	90	.0517	-.0353	-.0005
15	91	.0516	-.0558	-.0231
15	92	.0516	-.0595	-.0541
15	93	.0517	-.0475	-.0826
15	94	.0518	-.0212	-.0969

TABLE III. - CONTINUED

STRIP	ORIFICE	X/R	Y/R	Z/R
16	95	.0941	-.0097	.0387
16	96	.0941	-.0294	.0366
16	97	.0942	-.0491	.0300
16	98	.0941	-.0656	.0167
16	99	.0940	-.0755	-.0021
16	100	.0940	-.0791	-.0231
16	101	.0940	-.0791	-.0442
17	102	.1451	-.0120	.0667
17	103	.1452	-.0367	.0648
17	104	.1452	-.0617	.0571
17	105	.1451	-.0817	.0402
17	106	.1451	-.0923	.0159
17	107	.1450	-.0954	-.0100
17	108	.1450	-.0954	-.0355
18	109	.2007	-.0138	.0892
18	110	.2007	-.0721	.0792
18	111	.2007	-.1054	.0303
18	112	.2006	-.1077	-.0284
18	113	.2007	-.0948	-.0870
18	114	.2007	-.0426	-.1154
19	115	.2562	-.0152	.1056
19	116	.2563	-.0470	.1042
19	117	.2563	-.0795	.0957
19	118	.2563	-.1045	.0731
19	119	.2562	-.1145	.0406
19	120	.2561	-.1162	.0080
19	121	.2561	-.1162	-.0231
20	122	.3074	-.0160	.1162
20	123	.3074	-.0499	.1150
20	124	.3074	-.0852	.1066
20	125	.3074	-.1106	.0822
20	126	.3074	-.1200	.0471
20	127	.3073	-.1213	.0128
20	128	.3073	-.1213	-.0197
21	129	.3498	-.0165	.1220
21	130	.3499	-.0882	.1126
21	131	.3498	-.1229	.0506
21	132	.3498	-.1239	-.0178
21	133	.3499	-.1141	-.0896
21	134	.3498	-.0515	-.1234
22	135	.4669	-.0901	.1162
22	136	.4669	-.1162	.0901
22	137	.4669	-.1243	.0524
22	138	.4669	-.1250	.0168
22	139	.4669	-.1250	-.0168
23	140	.6003	-.0901	.1162
23	141	.6003	-.1162	.0901
23	142	.6003	-.1243	.0524

TABLE III. - CONTINUED

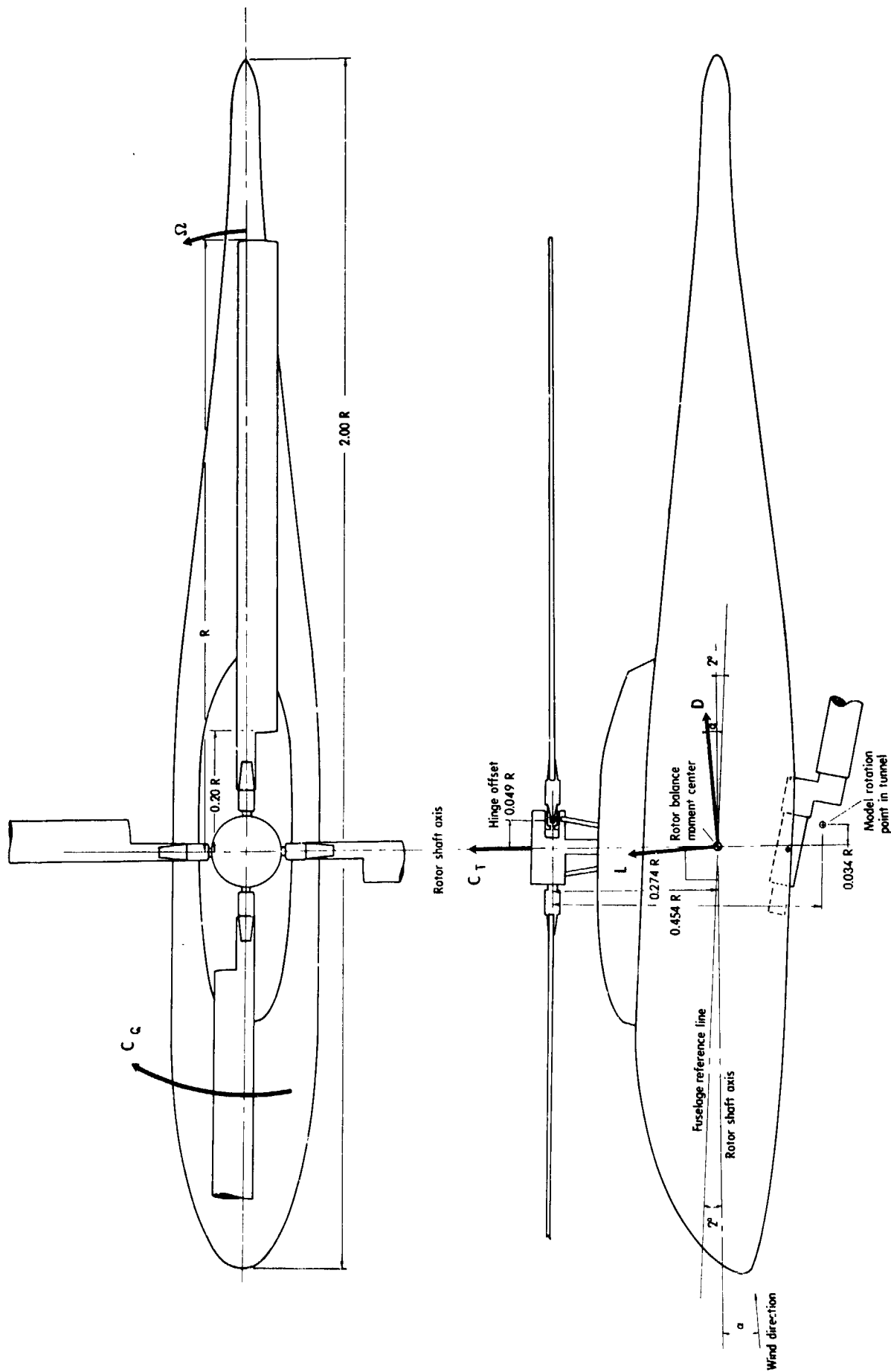
STRIP	ORIFICE	X/R	Y/R	Z/R
23	143	.6003	-.1250	.0168
23	144	.6003	-.1250	-.0168
24	145	.8809	-.0870	.1138
24	146	.8809	-.1123	.0885
24	147	.8810	-.1205	.0523
24	148	.8810	-.1213	.0177
24	149	.8810	-.1213	-.0148
25	150	1.0007	-.0796	.1081
25	151	1.0008	-.1109	.0520
25	152	1.0009	-.1119	-.0097
25	153	1.0007	-.1029	-.0744
25	154	1.0008	-.0467	-.1056
26	155	1.1621	-.0128	.1071
26	156	1.1619	-.0396	.1059
26	157	1.1618	-.0669	.0985
26	158	1.1618	-.0866	.0789
26	159	1.1619	-.0941	.0515
26	160	1.1621	-.0953	.0247
26	161	1.1621	-.0953	-.0009
26	162	1.1619	-.0941	-.0277
26	163	1.1618	-.0866	-.0551
26	164	1.1618	-.0669	-.0747
26	165	1.1619	-.0396	-.0822
26	166	1.1621	-.0128	-.0834
27	167	1.3460	-.0099	.0943
27	168	1.3453	-.0510	.0865
27	169	1.3453	-.0726	.0509
27	170	1.3460	-.0739	.0105
27	171	1.3453	-.0661	-.0306
27	172	1.3453	-.0305	-.0522
28	173	1.5307	-.0070	.0816
28	174	1.5300	-.0355	.0749
28	175	1.5300	-.0513	.0503
28	176	1.5307	-.0527	.0219

TEST IV.- TEST CONDITIONS

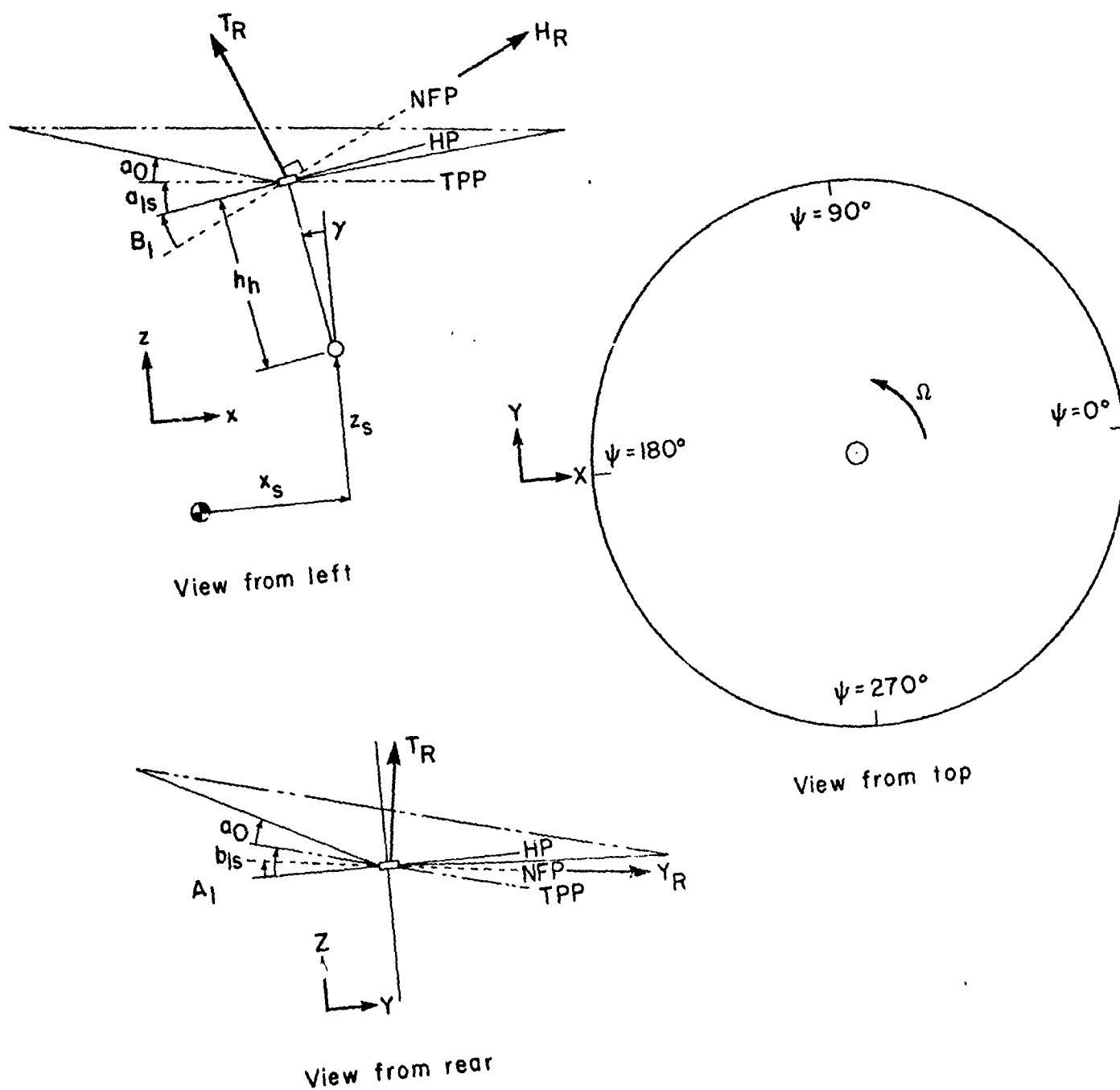
Run	Point	μ (knots)	α_F	β_F	RPM	C_T	a_{1s}	b_{1s}
10	79	(41.2)	-10.0	0	1200	0.00300 .00467 .00639 .00819 .00988 .00637 .00642	0	0
	80	(41.3)	- 5.0	0				
	81	(41.2)	5.0	0				
11	82	(41.2)	0	5.0				
	83	(41.2)	0	0				
	84	(41.3)	0	-5.0				
	85	(41.2)	0	-10.0				
	86	(41.4)	0	-15.0				
	87	(41.2)	0	0				
	88	(81.5)	-10.0	0				
12	89	(81.7)	- 5.0	0				
	90	(81.7)	0	0				
	91	(81.6)	5.0	0				
	92	(81.5)	0	0				
13	93	(81.7)	0	-5.0				
	94	(81.7)	0	0				
	95	(81.8)	0	-5.0				
	96	(81.7)	0	-15.0				
15	121	0	0	0				
	122	0	0	0				
	123	0	0	0				
	124	0	0	0				
	125	0	0	0				
	126	0	0	0				
	127	0	0	0				
	128	0	0	0				
	129	0	0	0				
	130	0	0	0				
16	131	0	0	0				
	132	0	0	0				
	133	0	0	0				
	134	0	0	0				
	135	0	0	0				
	136	0	0	0				
	137	0	0	0				
	138	0	0	0				
	139	0	0	0				
	140	0	0	0				
17	141	0	0	0				
	142	0	0	0				
	143	0	0	0				
	144	0	0	0				
	145	0	0	0				
	146	0	0	0				
	147	0	0	0				
	148	0	0	0				
20	167	0.050	3.30	0				
	168	.050	2.25	0				
	169	.050	1.23	0				
	170	.050	0	0				
	171	.050	0	0				
	172	.050	0	0				
20	167	0.050	3.30	0				
	168	.050	2.25	0				
	169	.050	1.23	0				
	170	.050	0	0				
	171	.050	0	0				
	172	.050	0	0				

TABLE IV. - CONTINUED

Run	Point	μ knots	α_F	β_F	RPM	C_T	a	b
22	137	0.054	1.60	0	1200	0.00098	-.68	.21
	138		1.23			.00209	-.50	.40
	139		1.18			.00518	1.04	1.03
	140	↓	2.15			.00827	-.54	.07
25	147	.15	2.42			.00275	-.27	1.34
	148		2.86			.00500	-.38	1.49
	149		3.09			.00706	-.37	1.25
	150	↓	2.29			.00781	-.53	1.24
29	177	.20	-1.0			.00132	-.07	-.19
	178					.00366	-.10	-.22
	179					.00559	-.25	-.23
	180					.0062	-.12	-.18
	181					.00759	-.09	-.13
	182	↓				.00861	-.18	-.13



(a) Fuselage
Figure 1.- Axes and sign conventions.



(b) Rotor system
Figure 1.- Concluded.

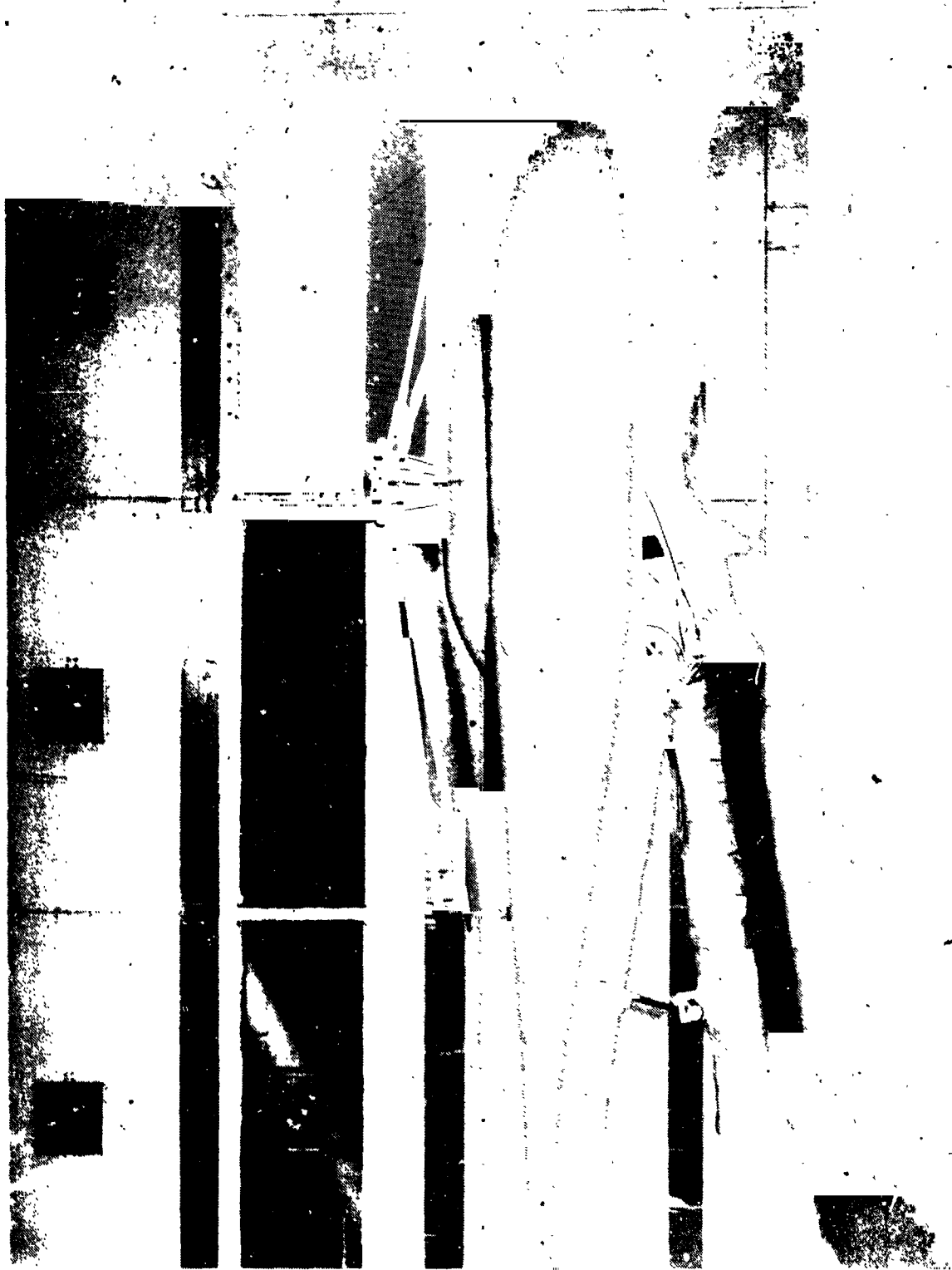


Figure 2.- Wind-tunnel model installed in test section of V-700L tunnel.

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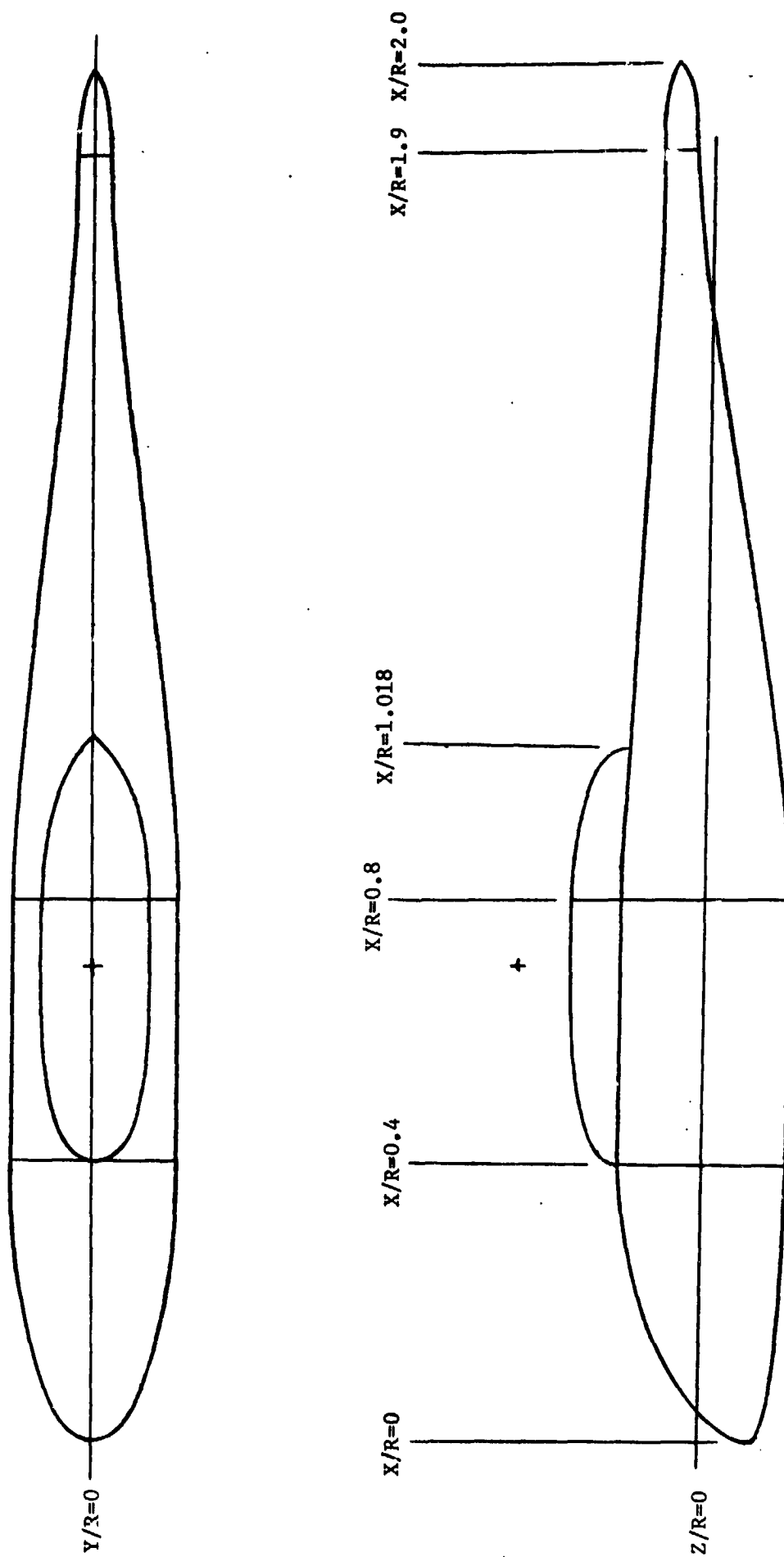


Figure 3.- Fuselage component regions.

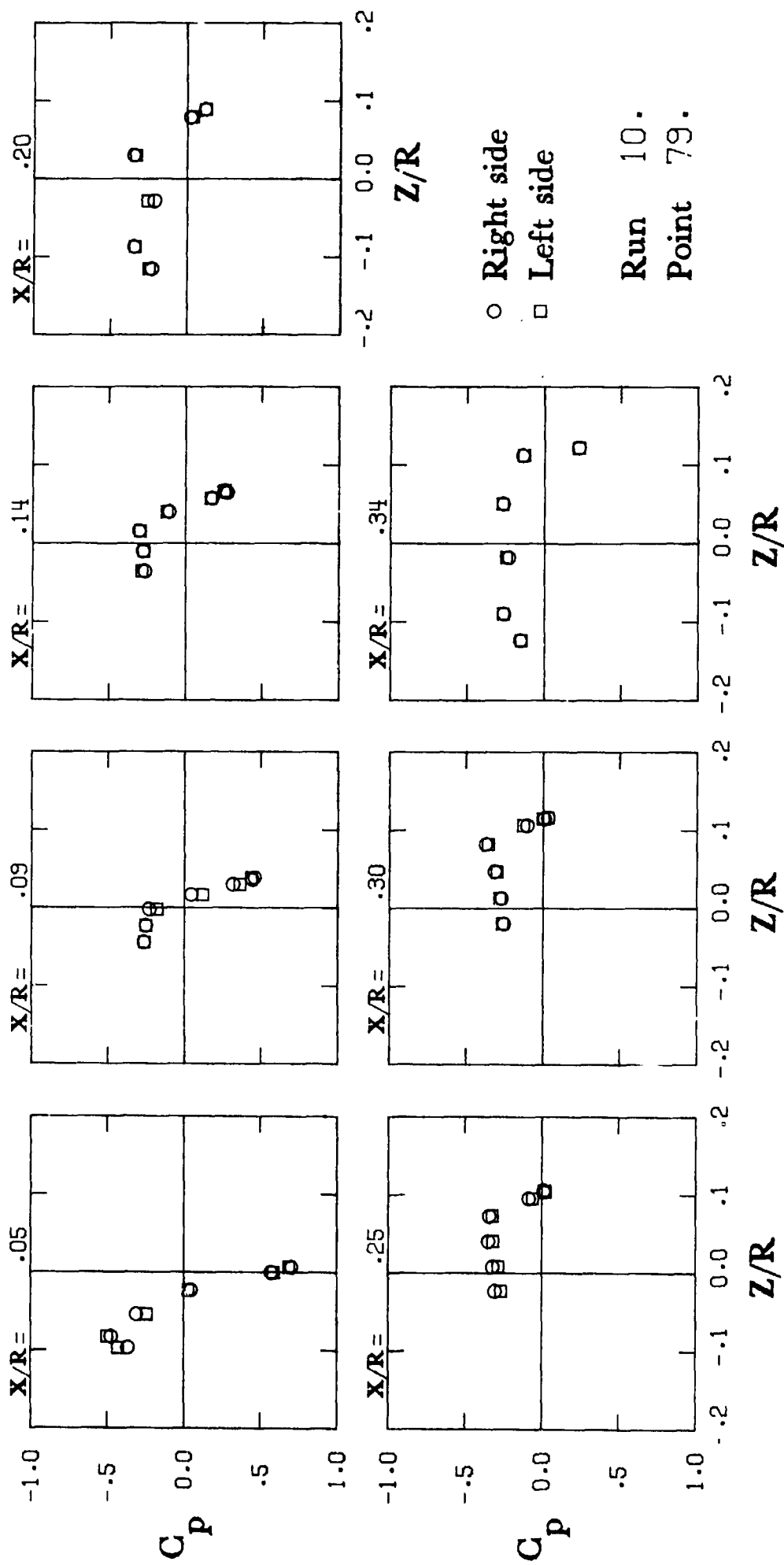


Figure 4. Pressure variations on the body surface.

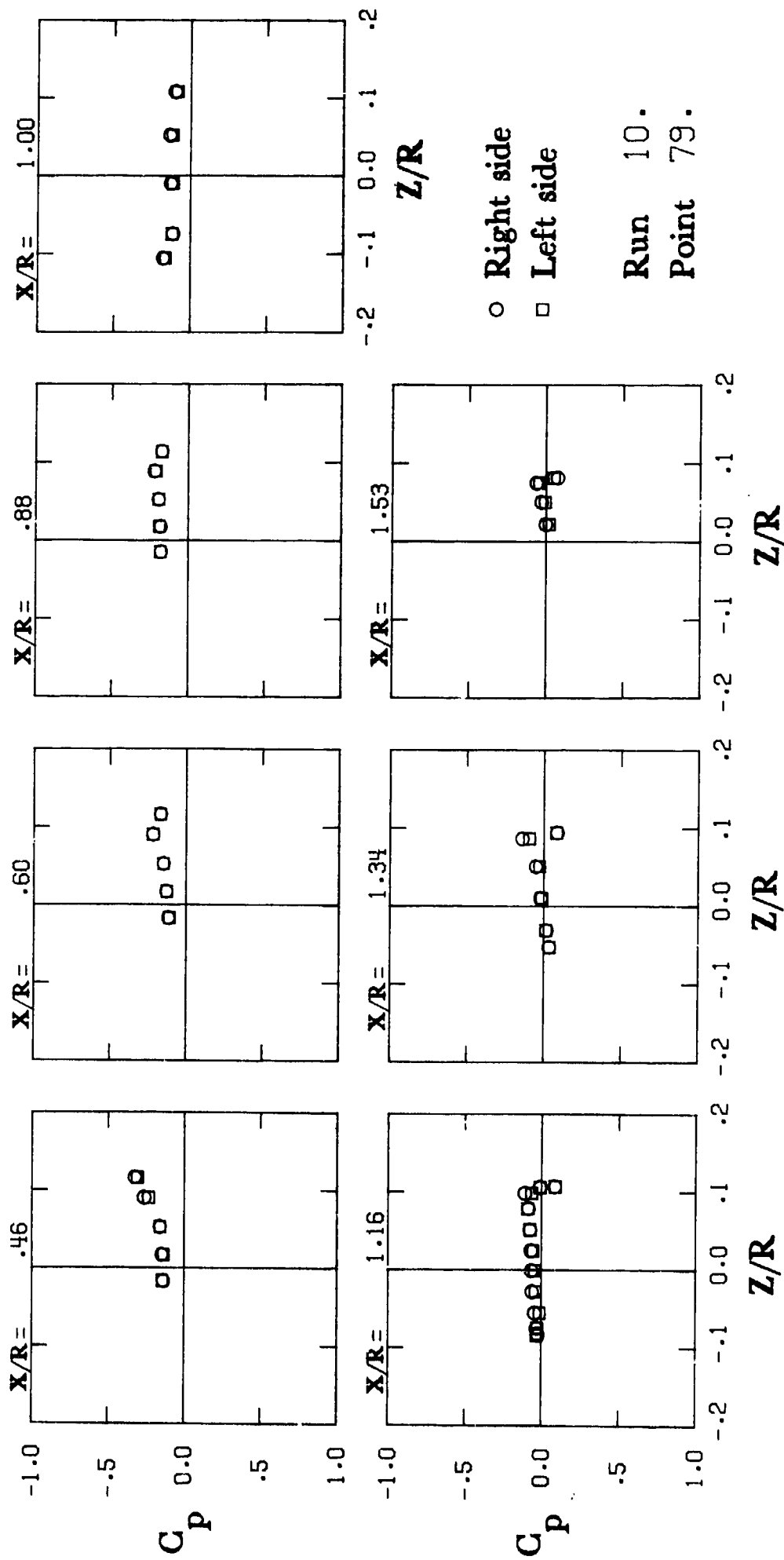


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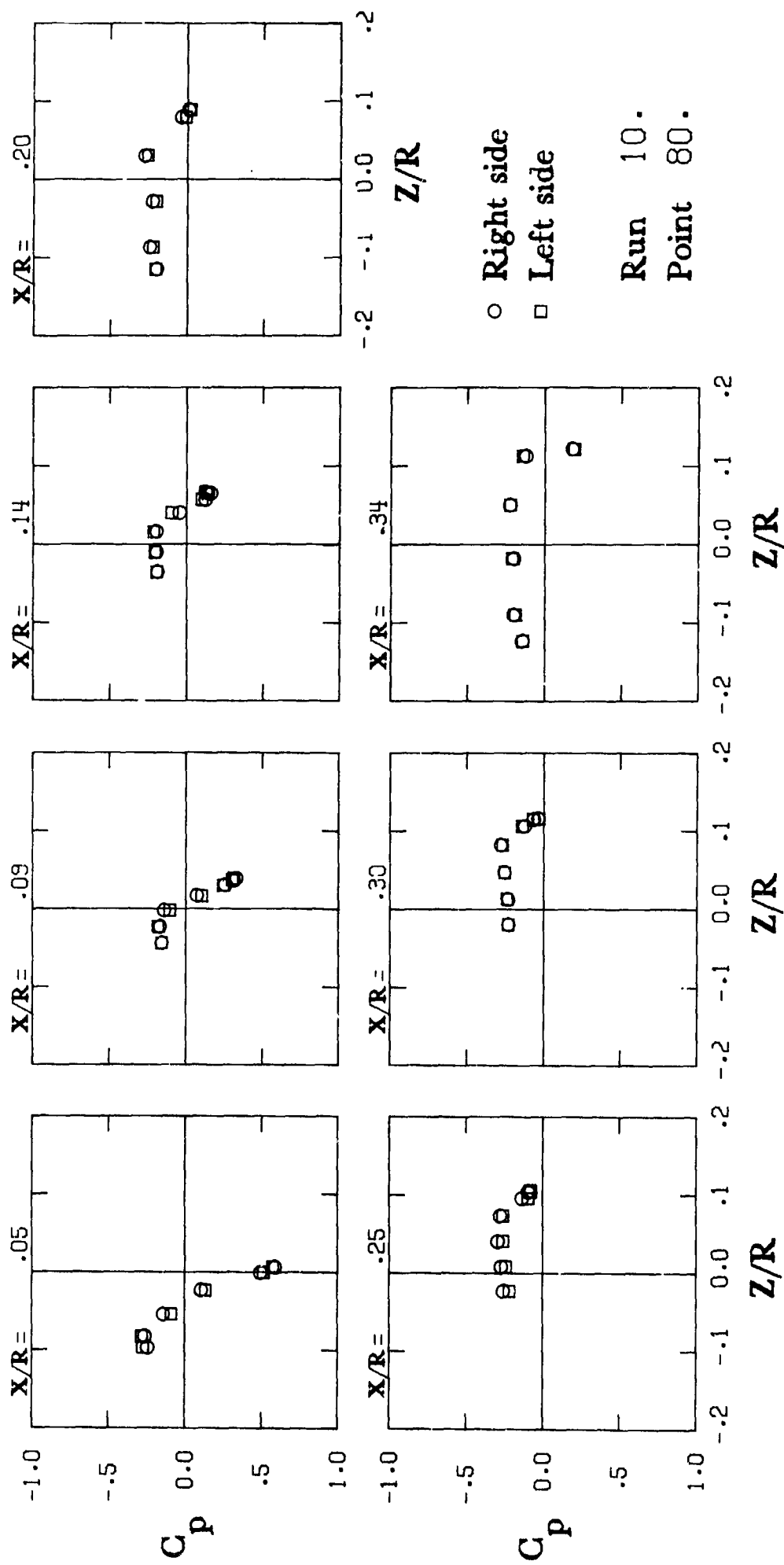


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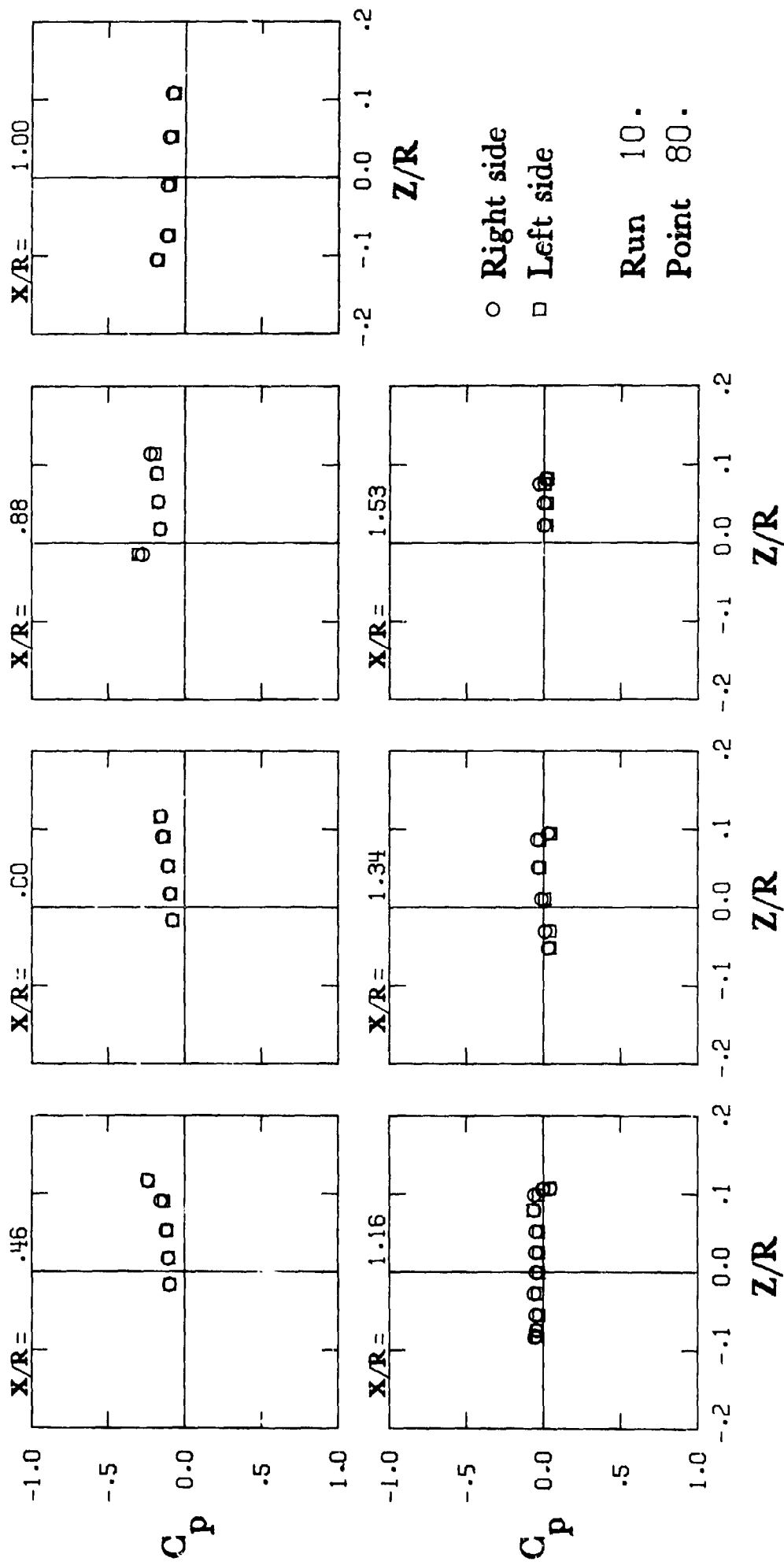


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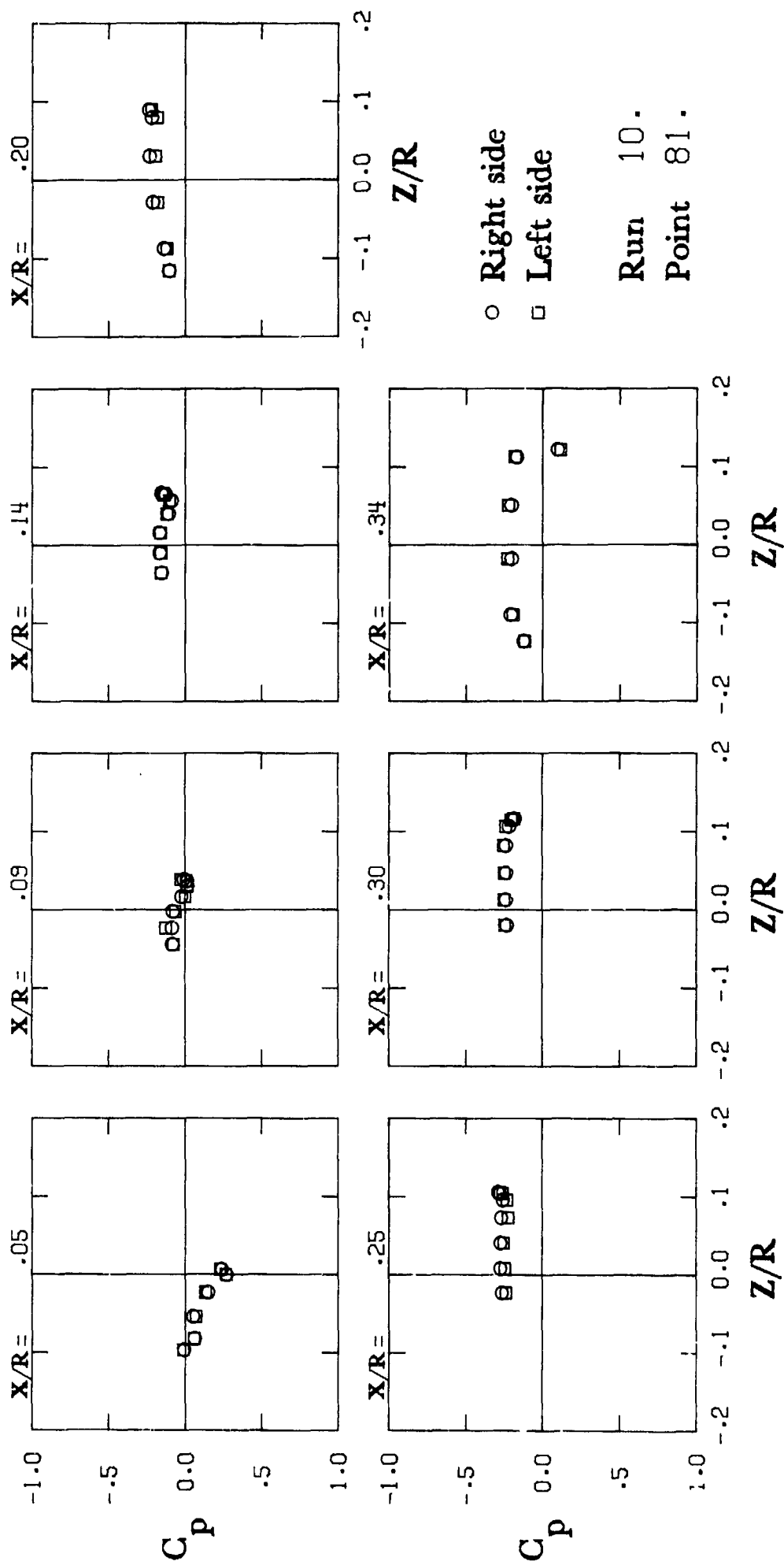


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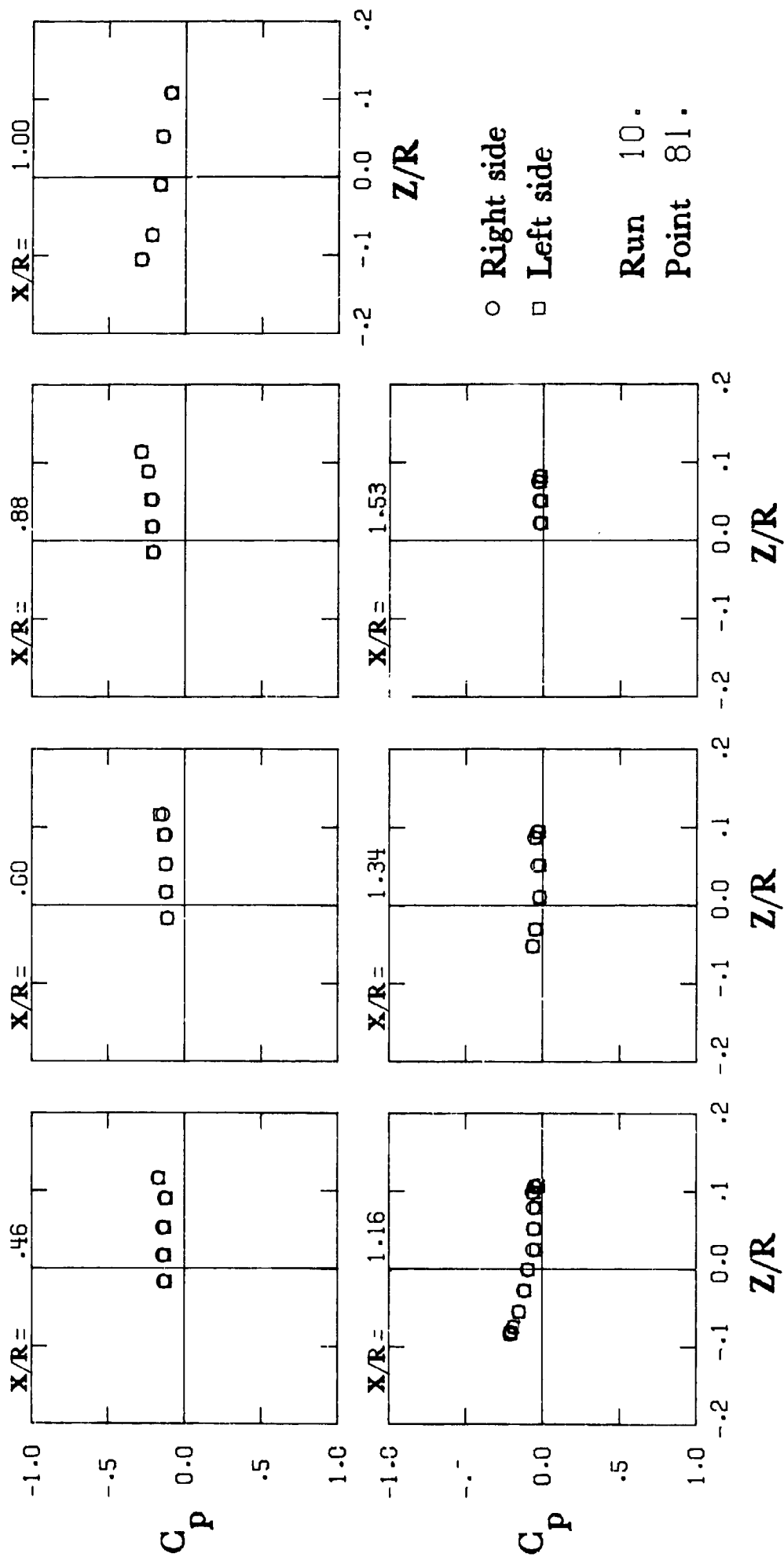


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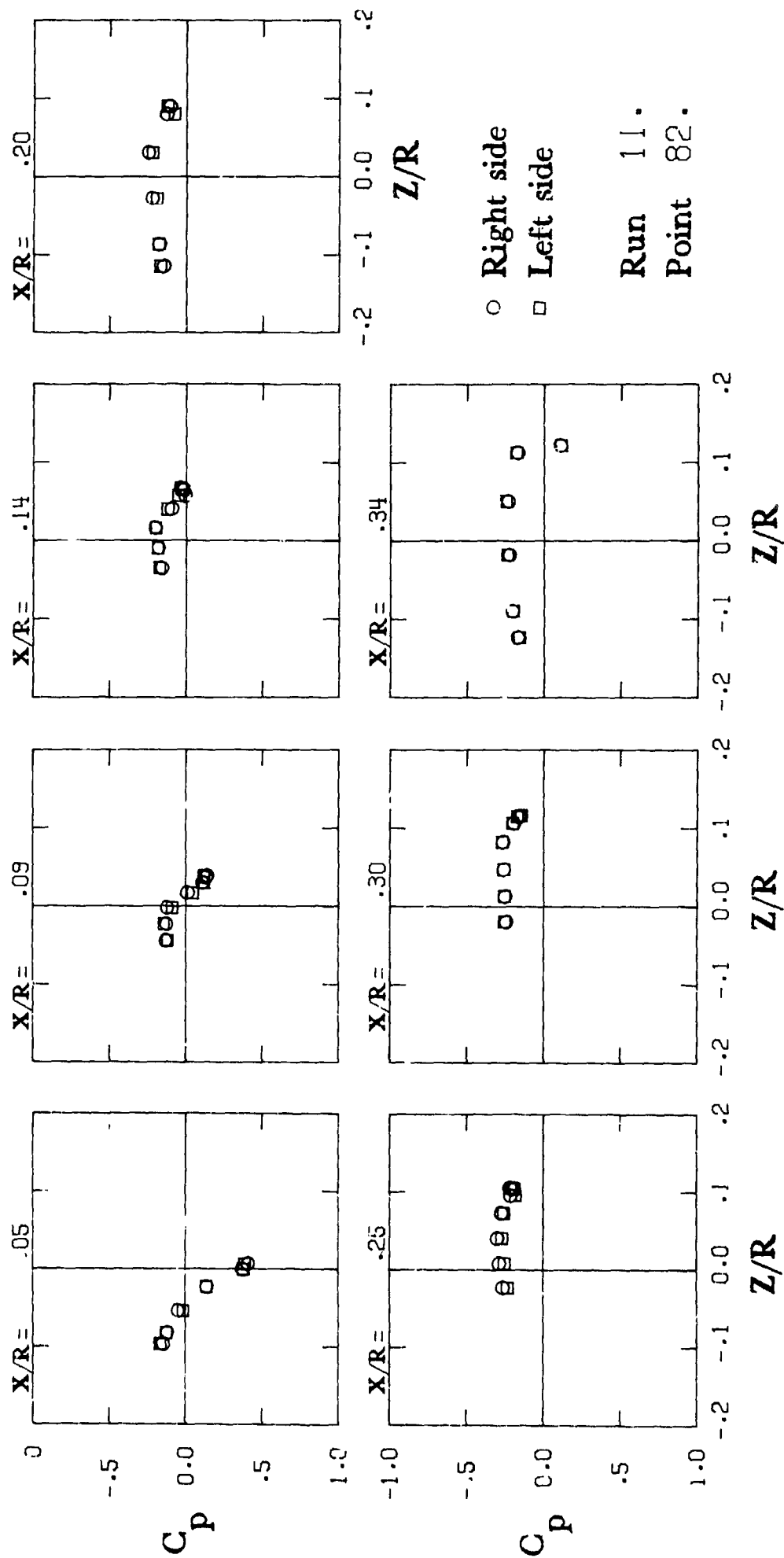


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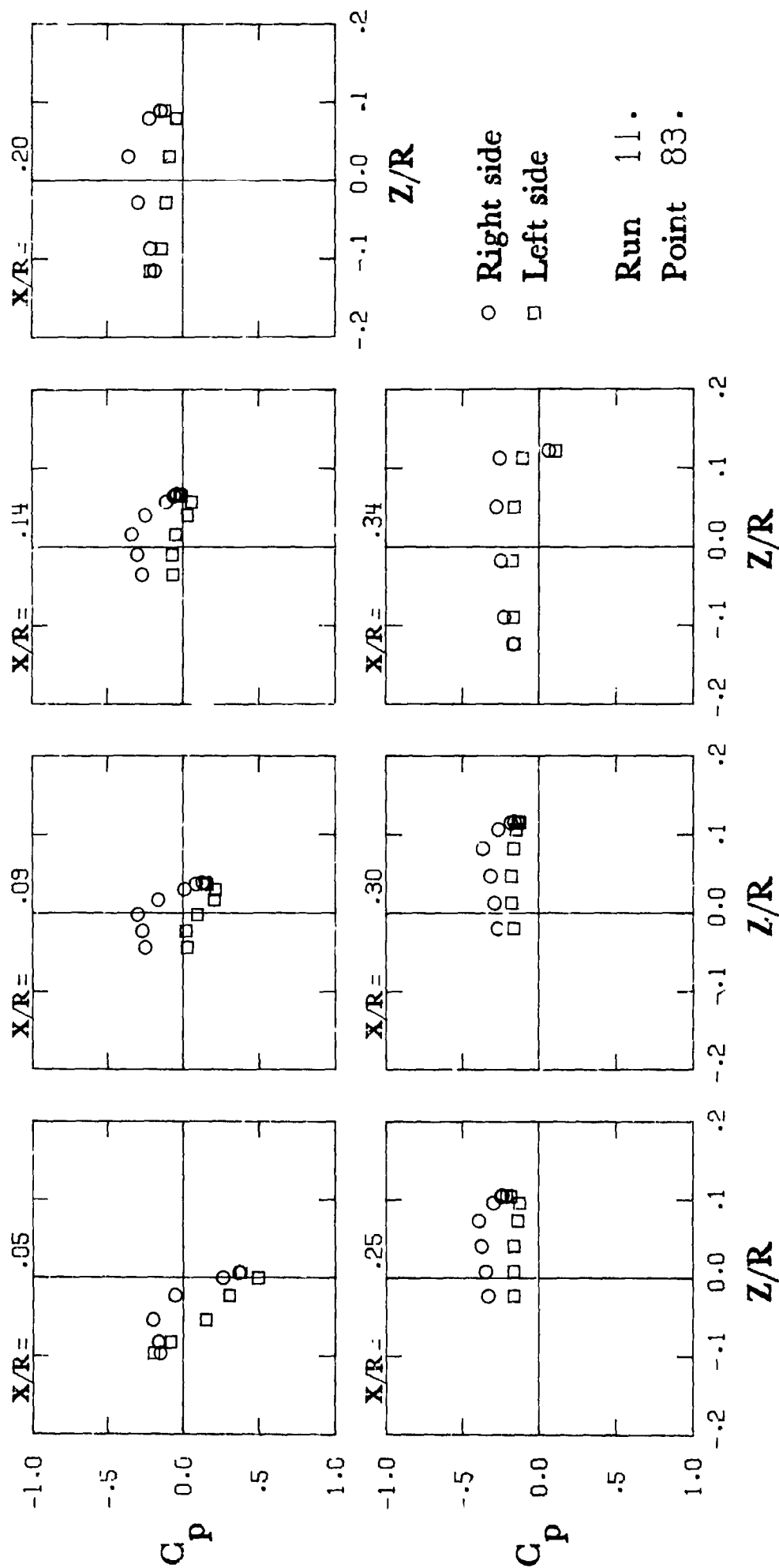


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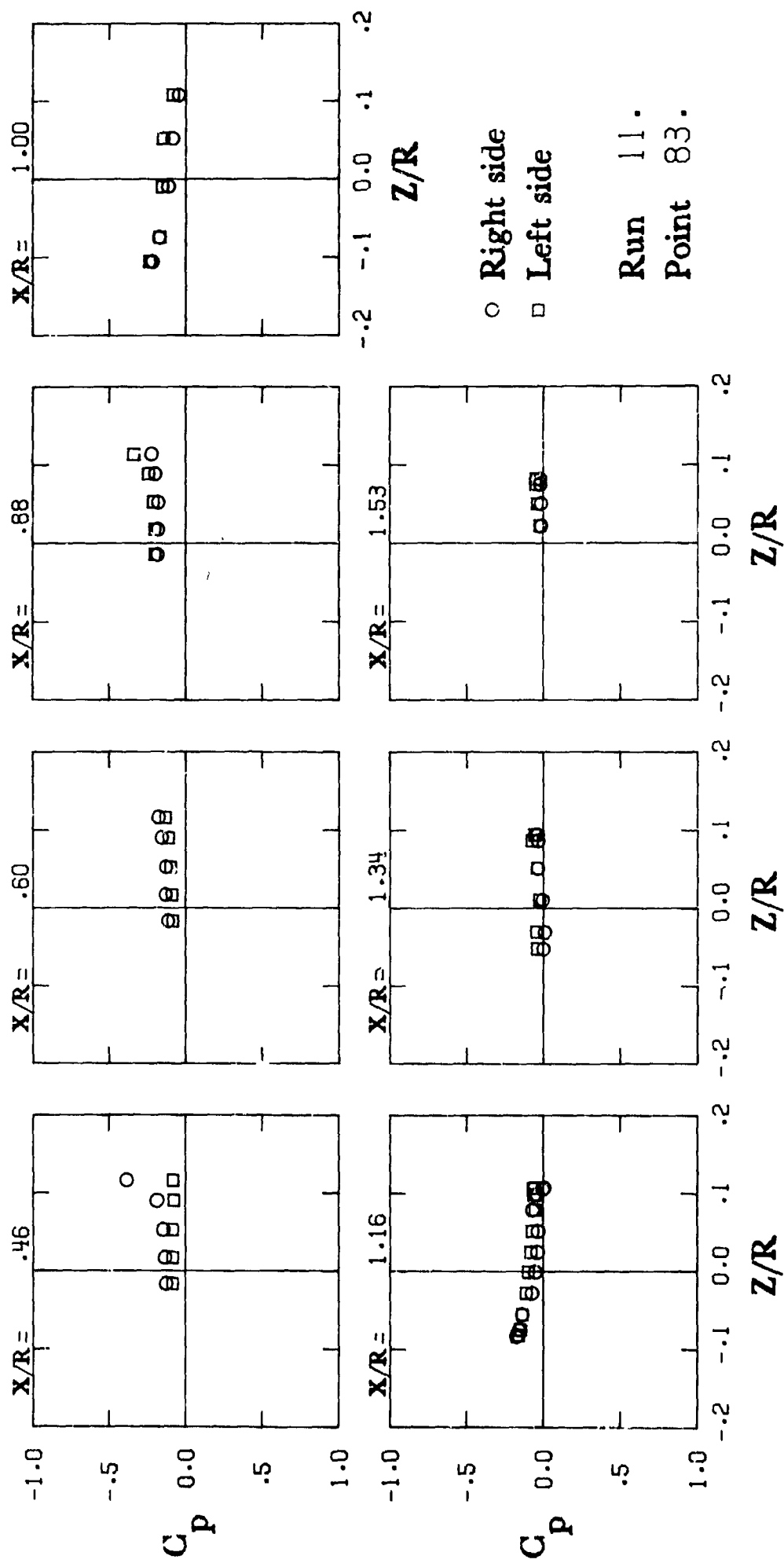


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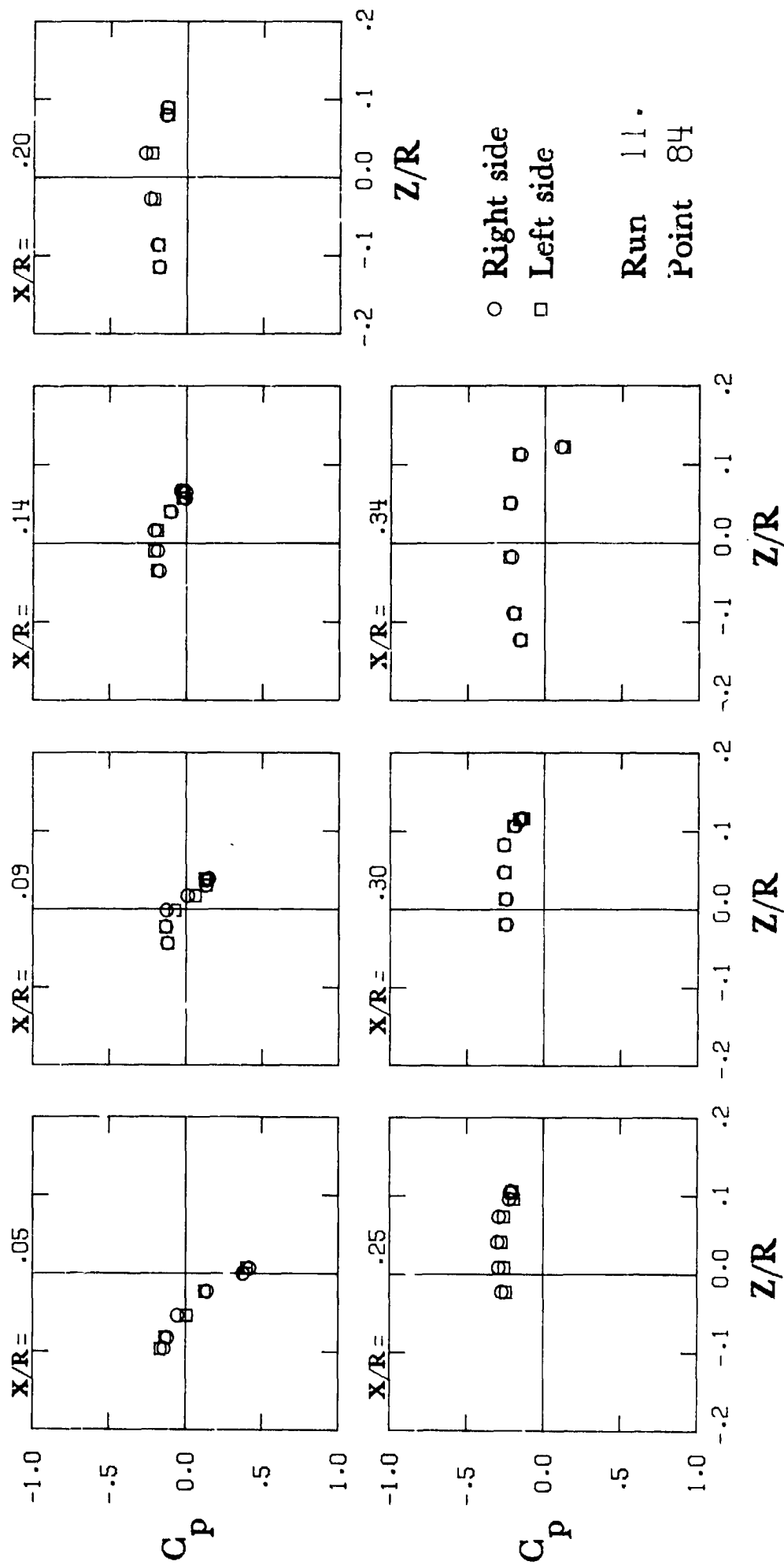


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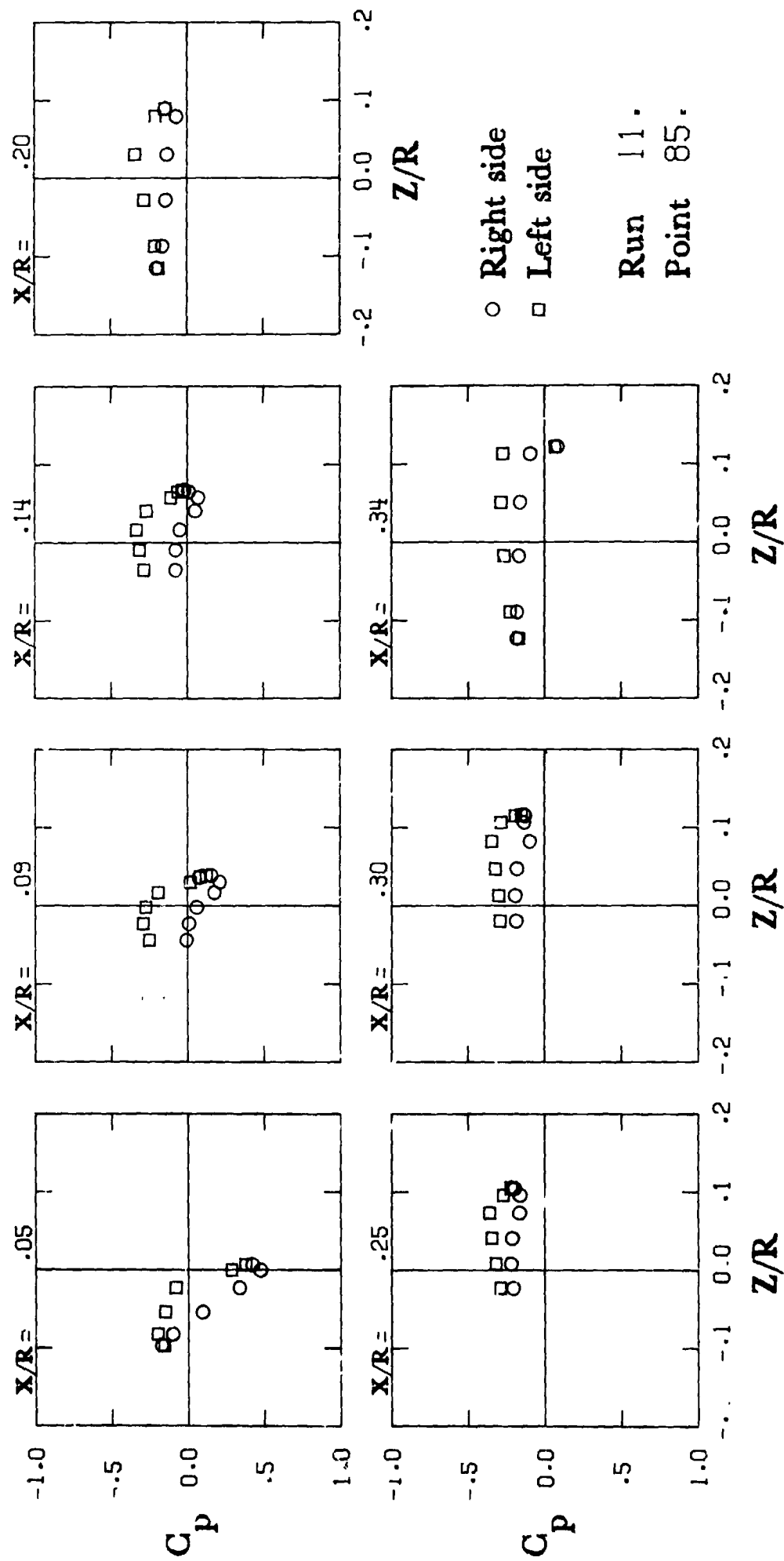


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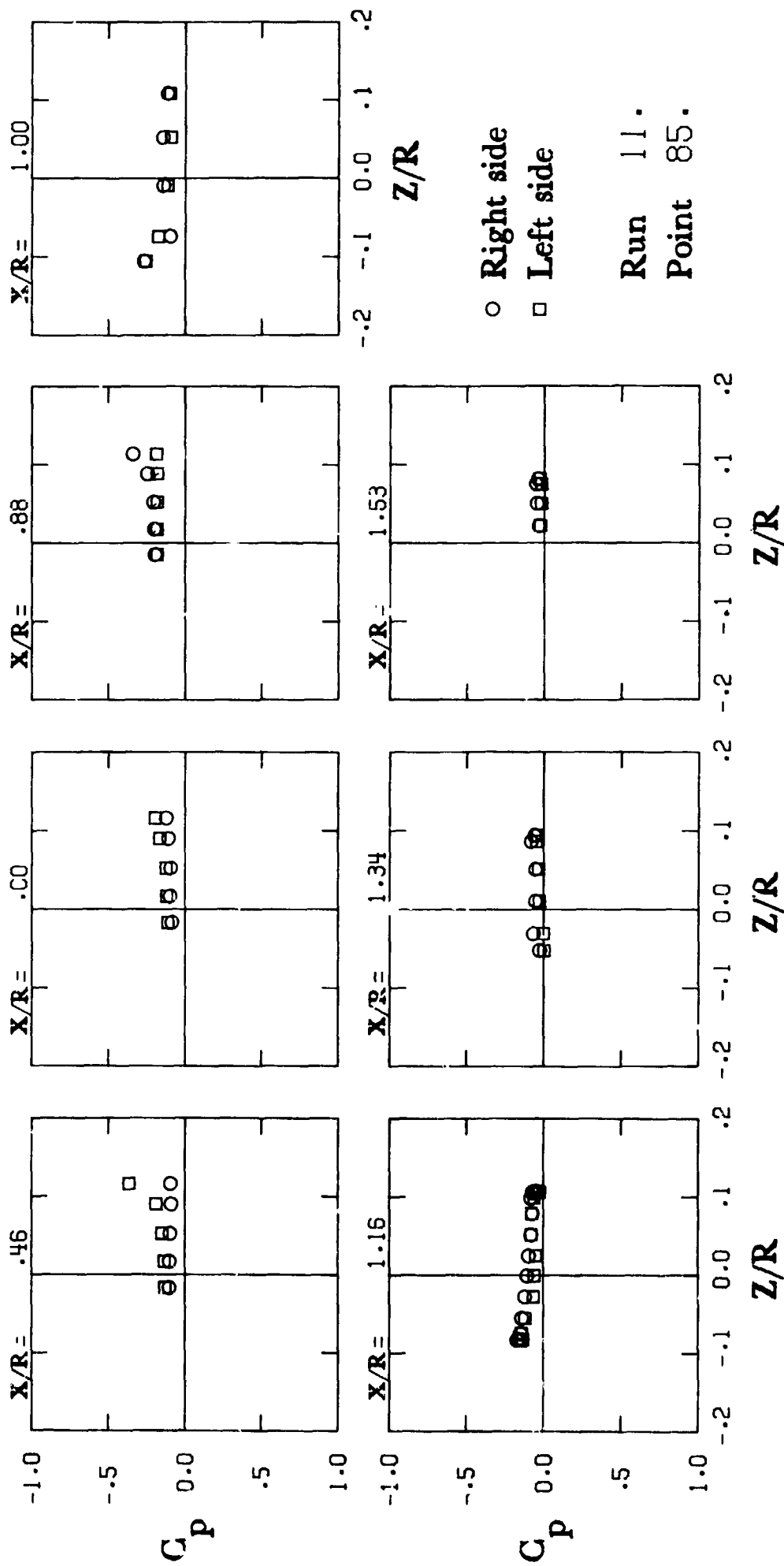


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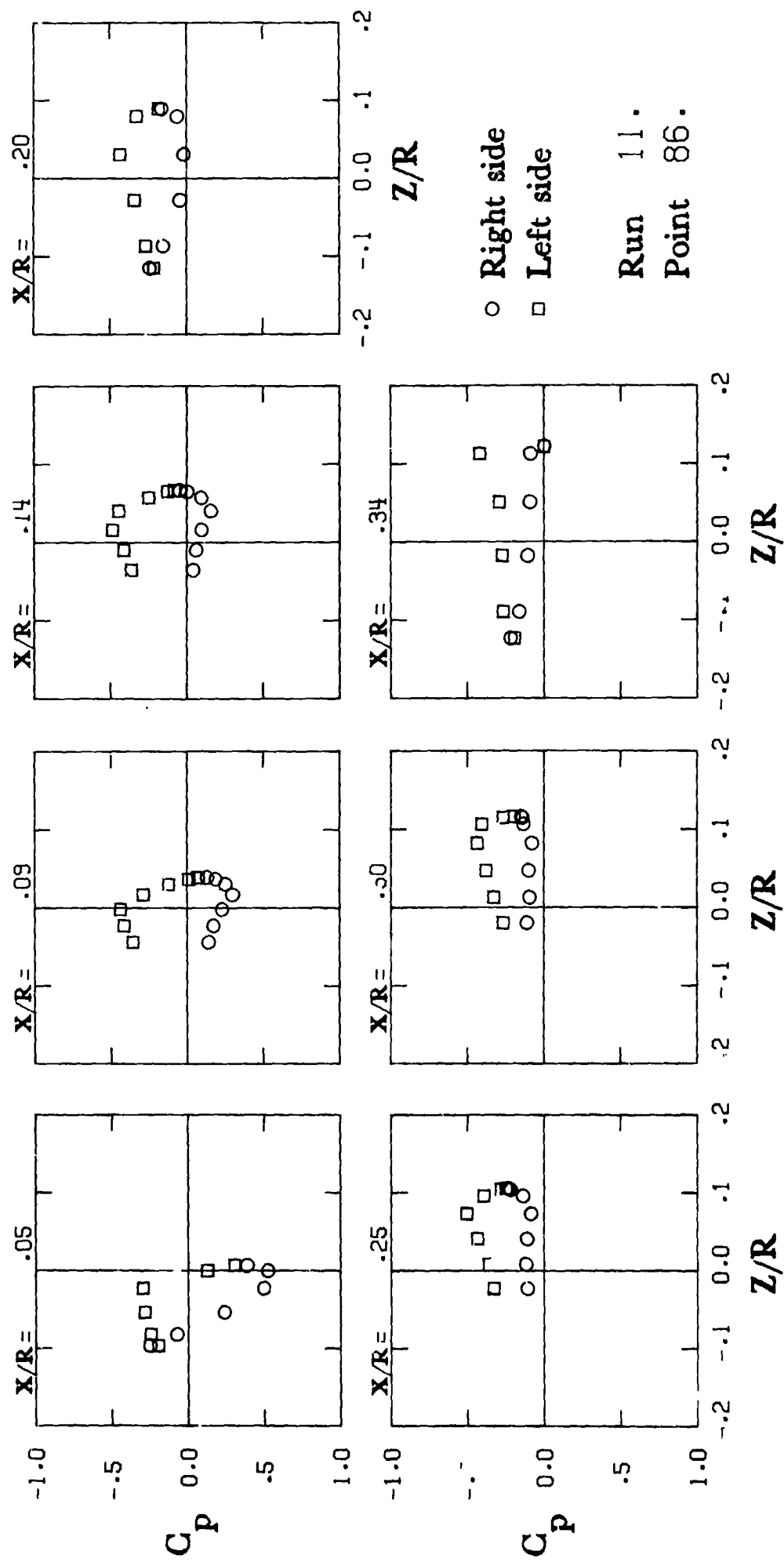


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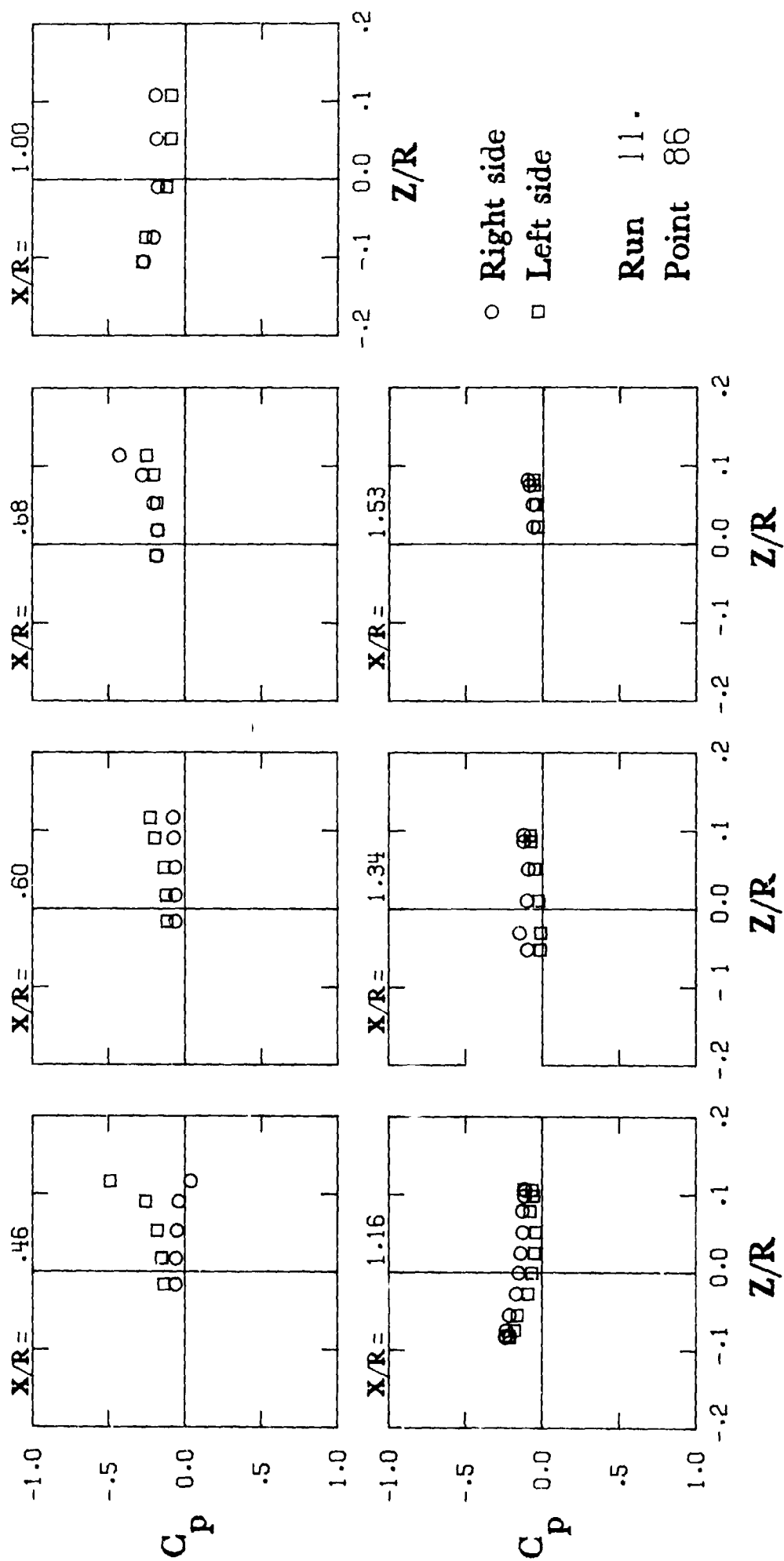


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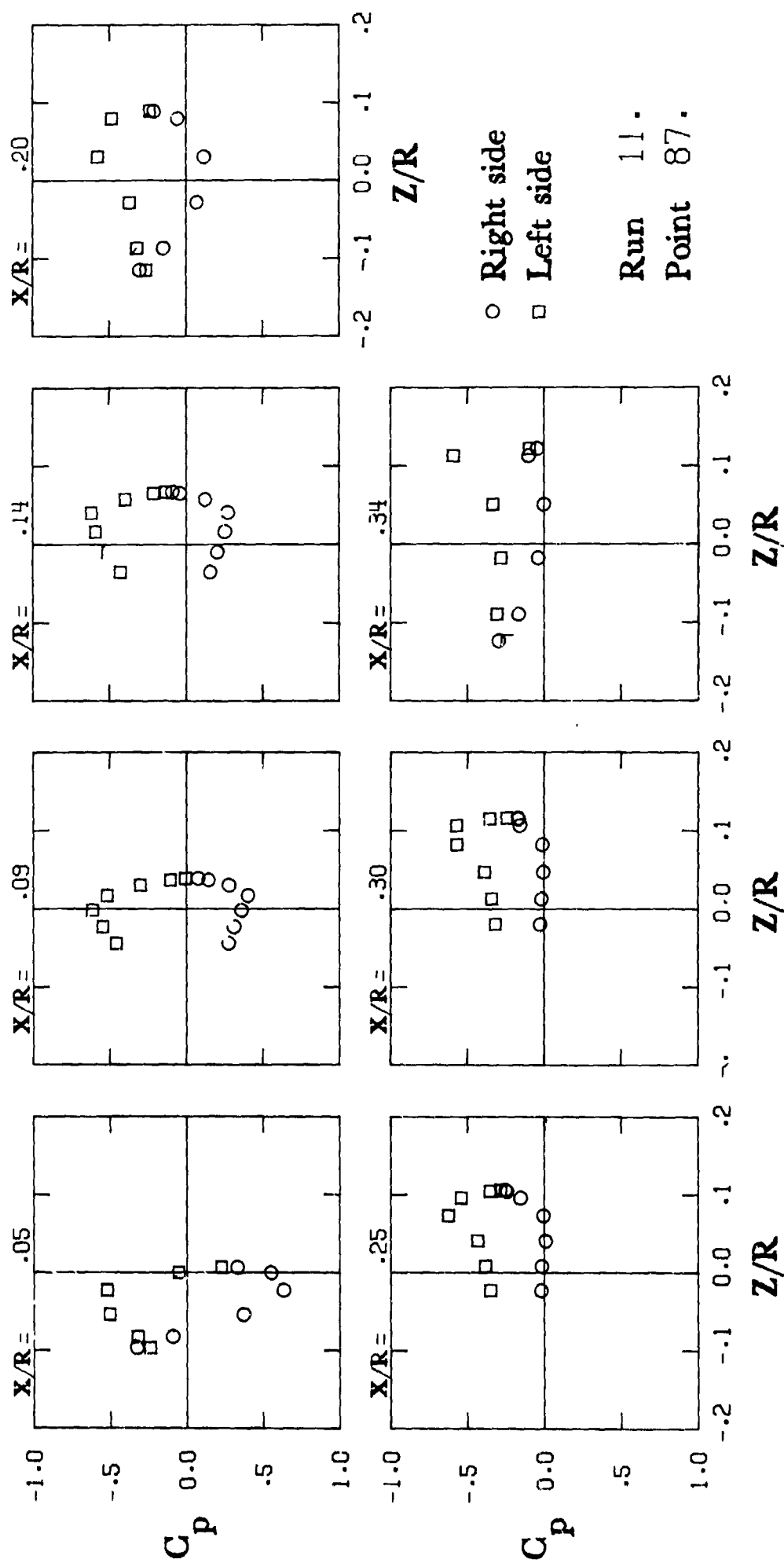


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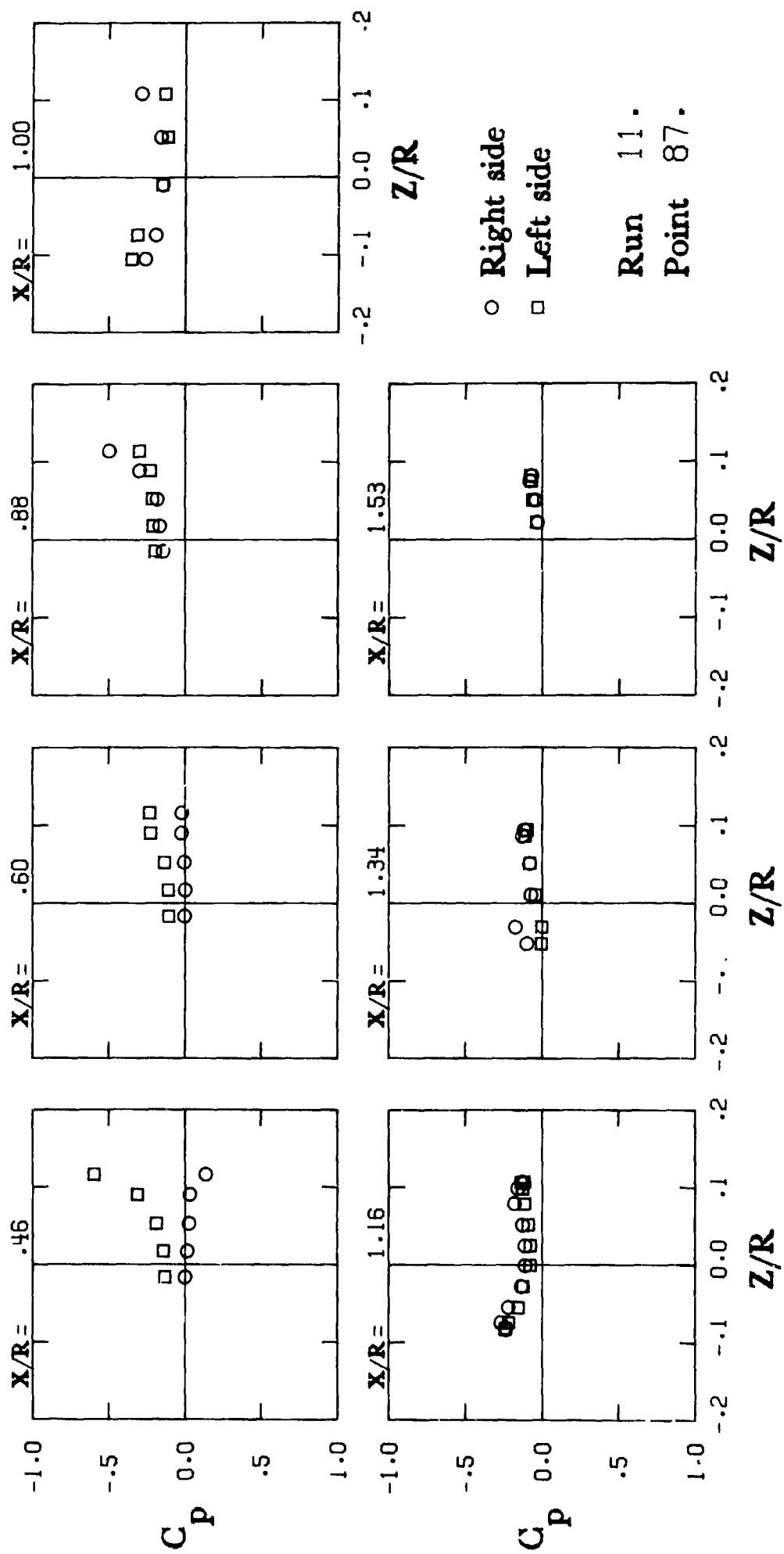


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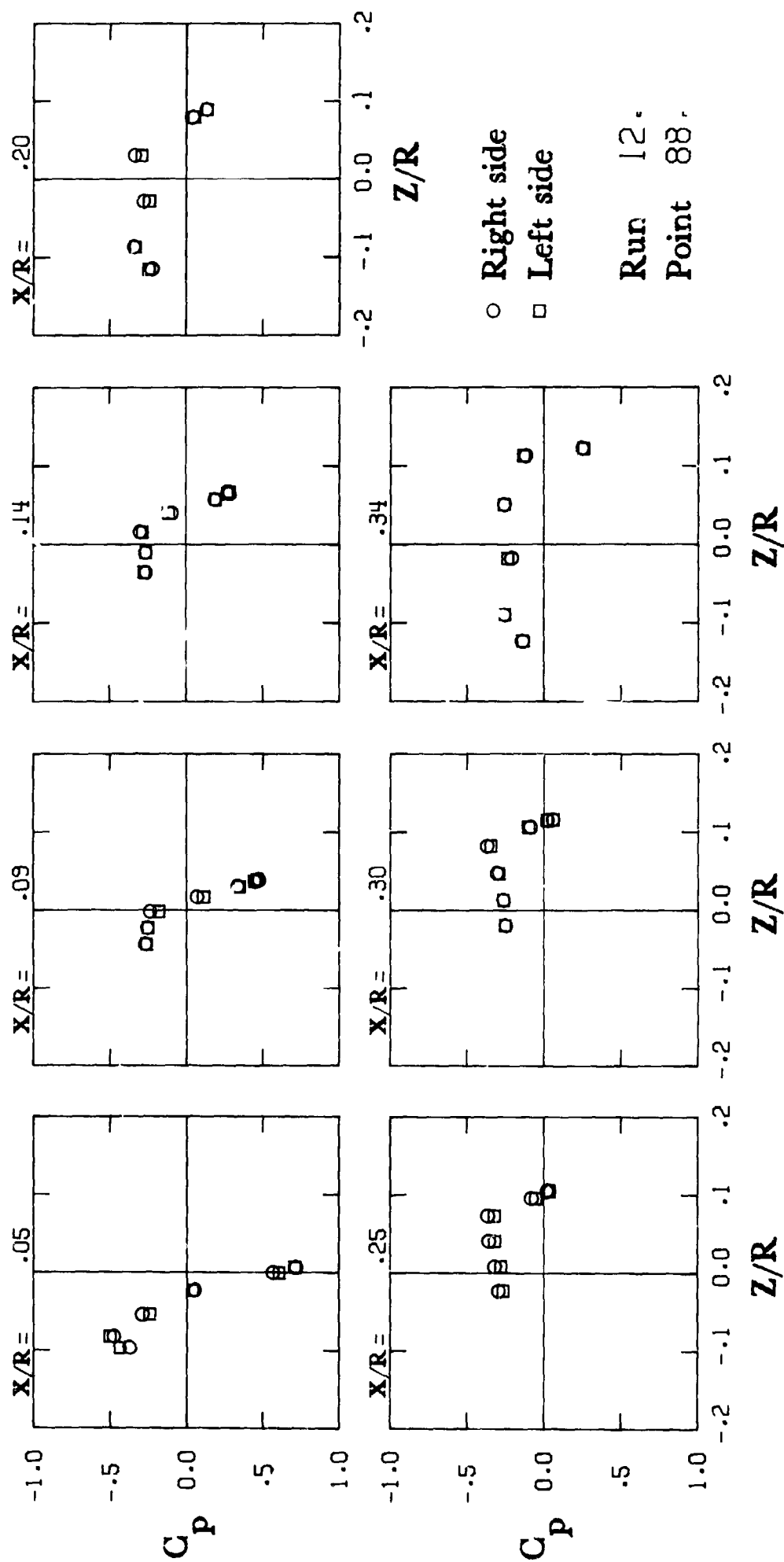


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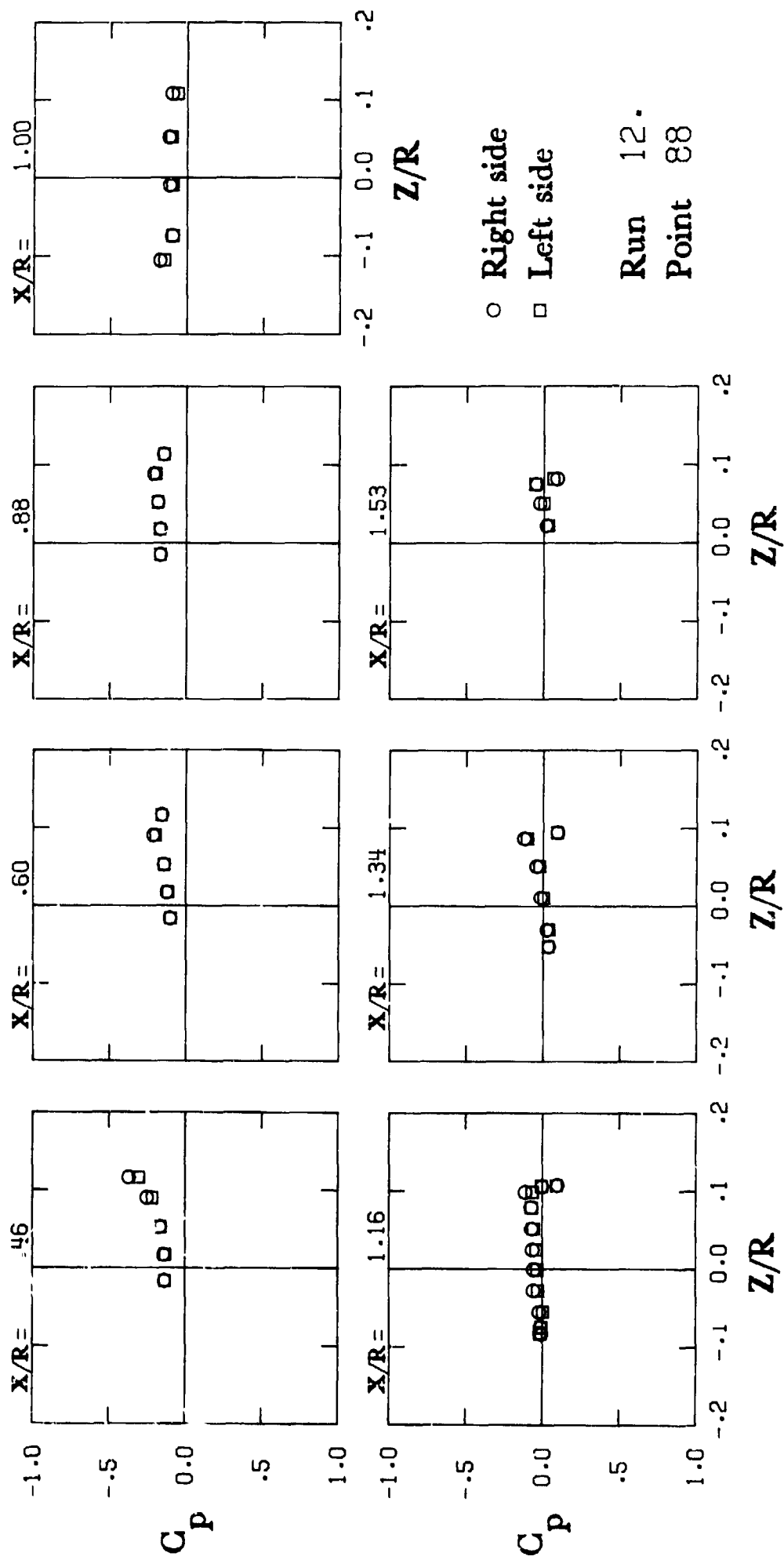


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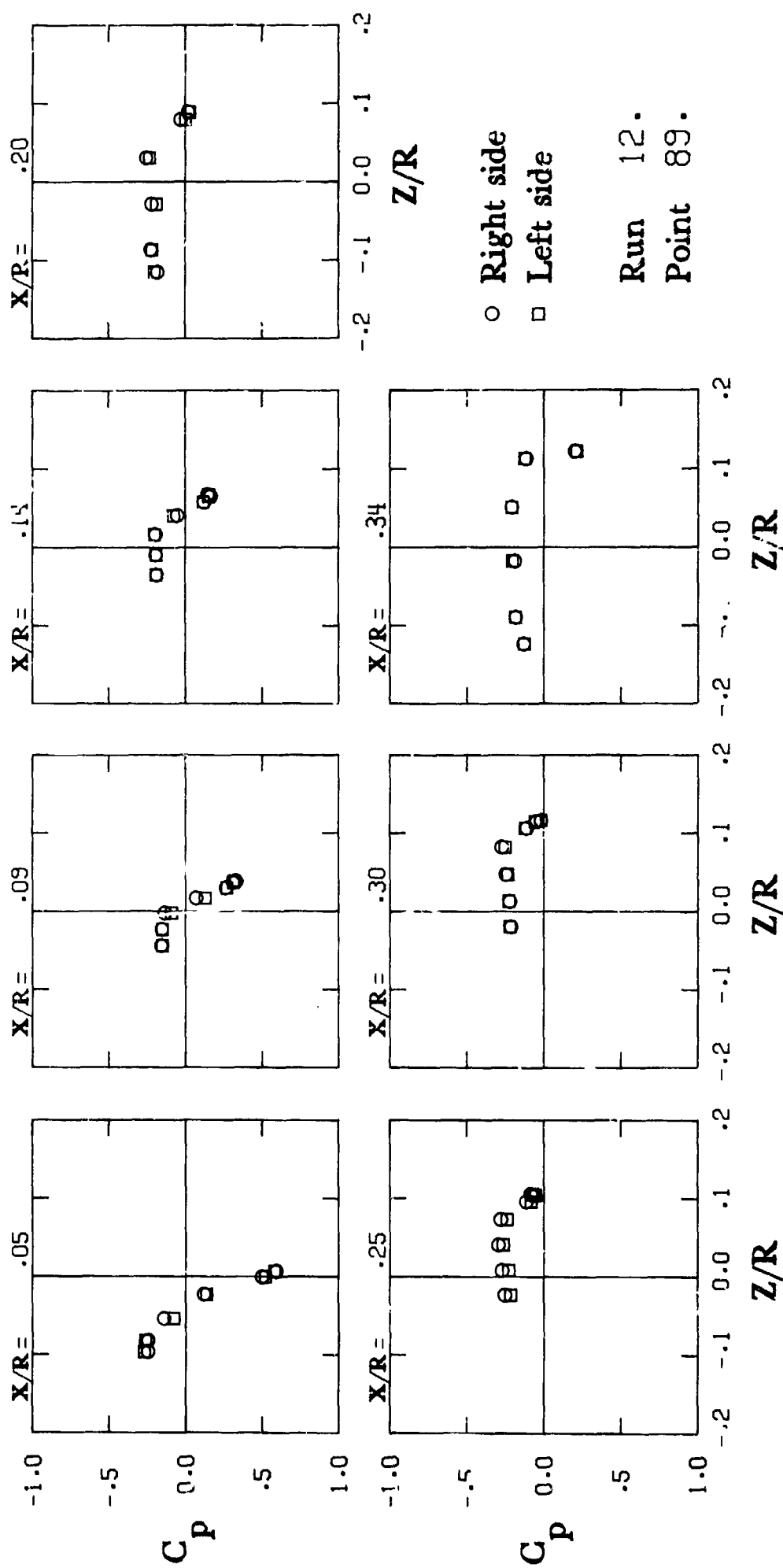


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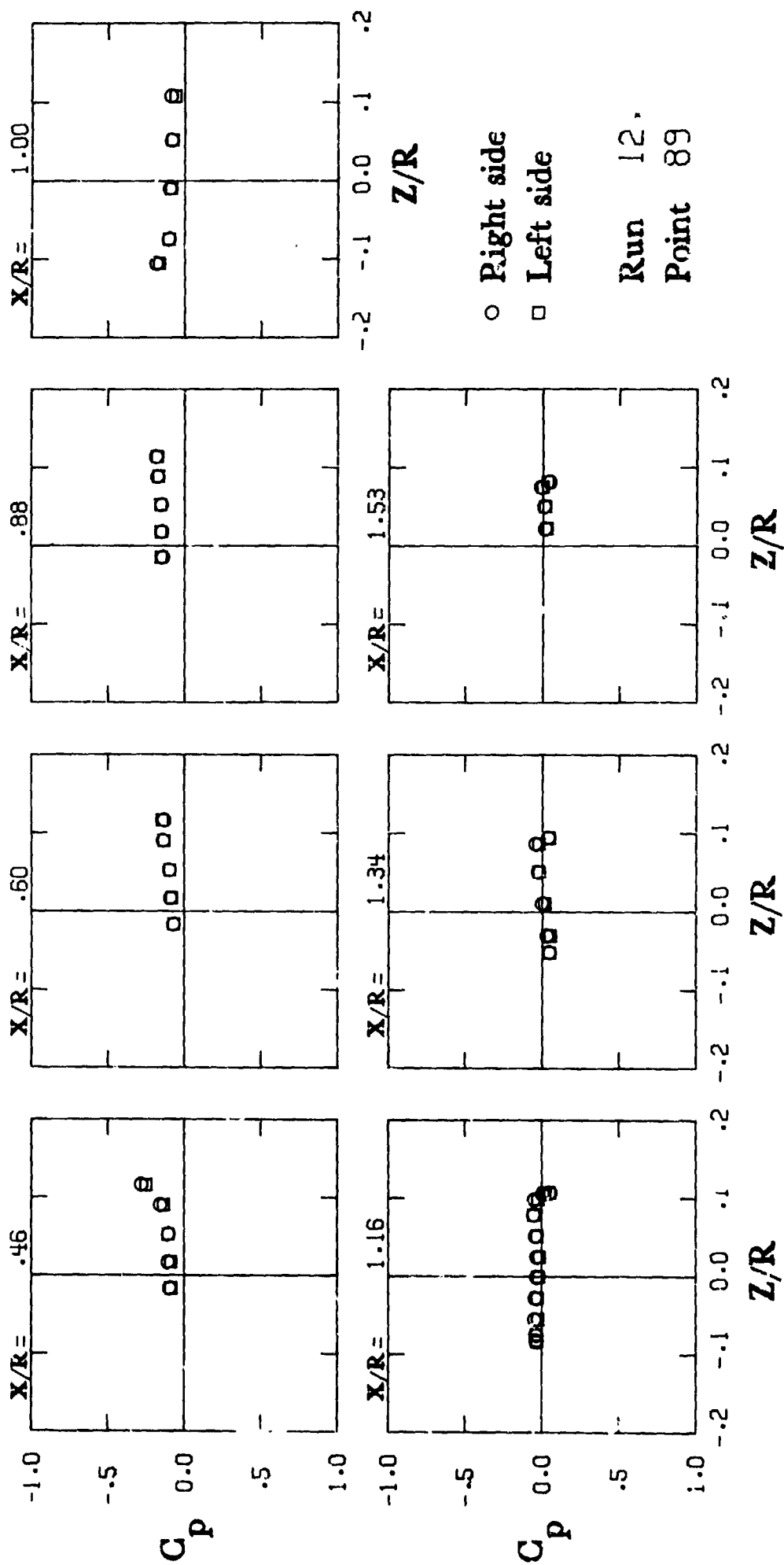


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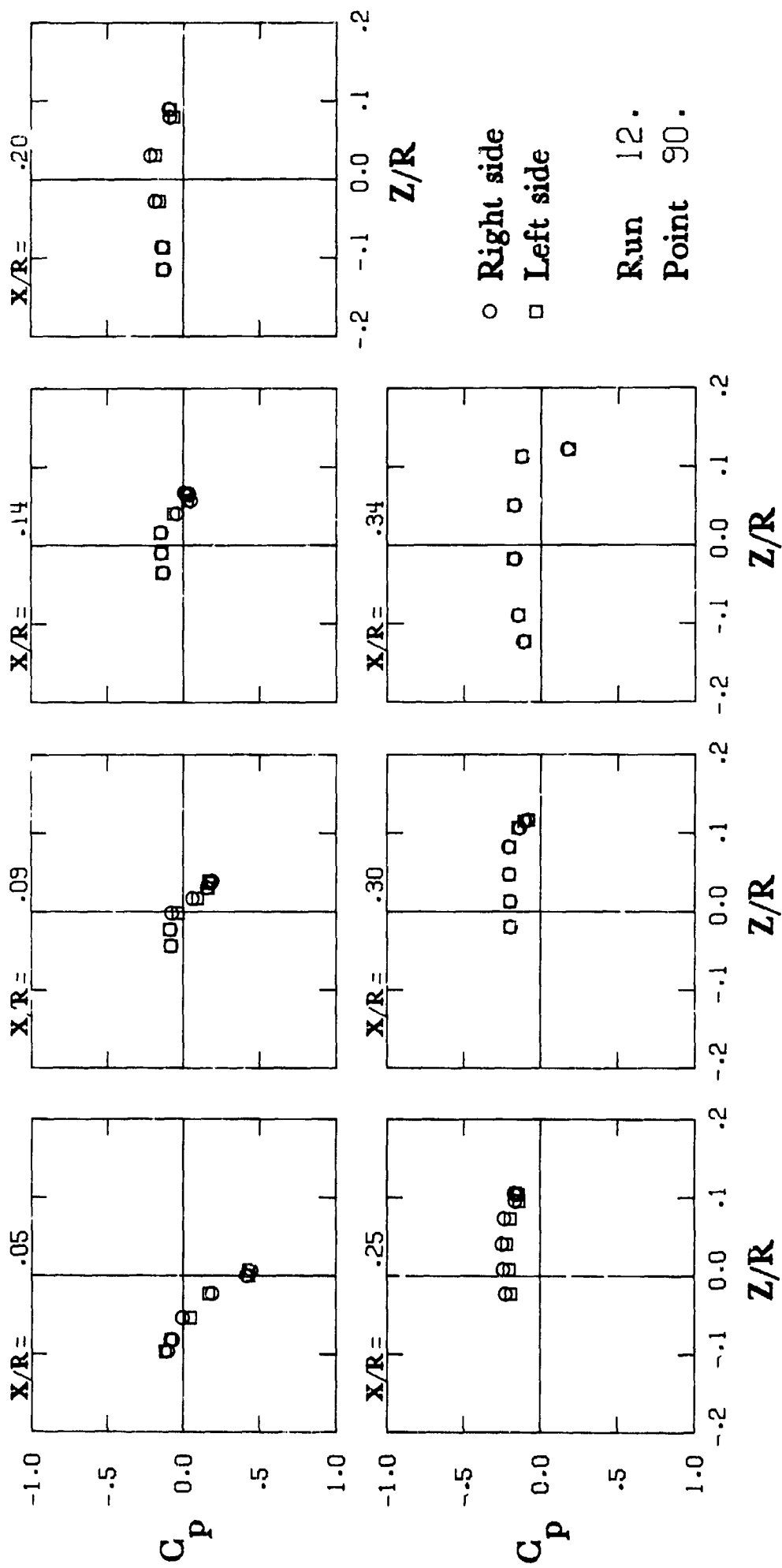


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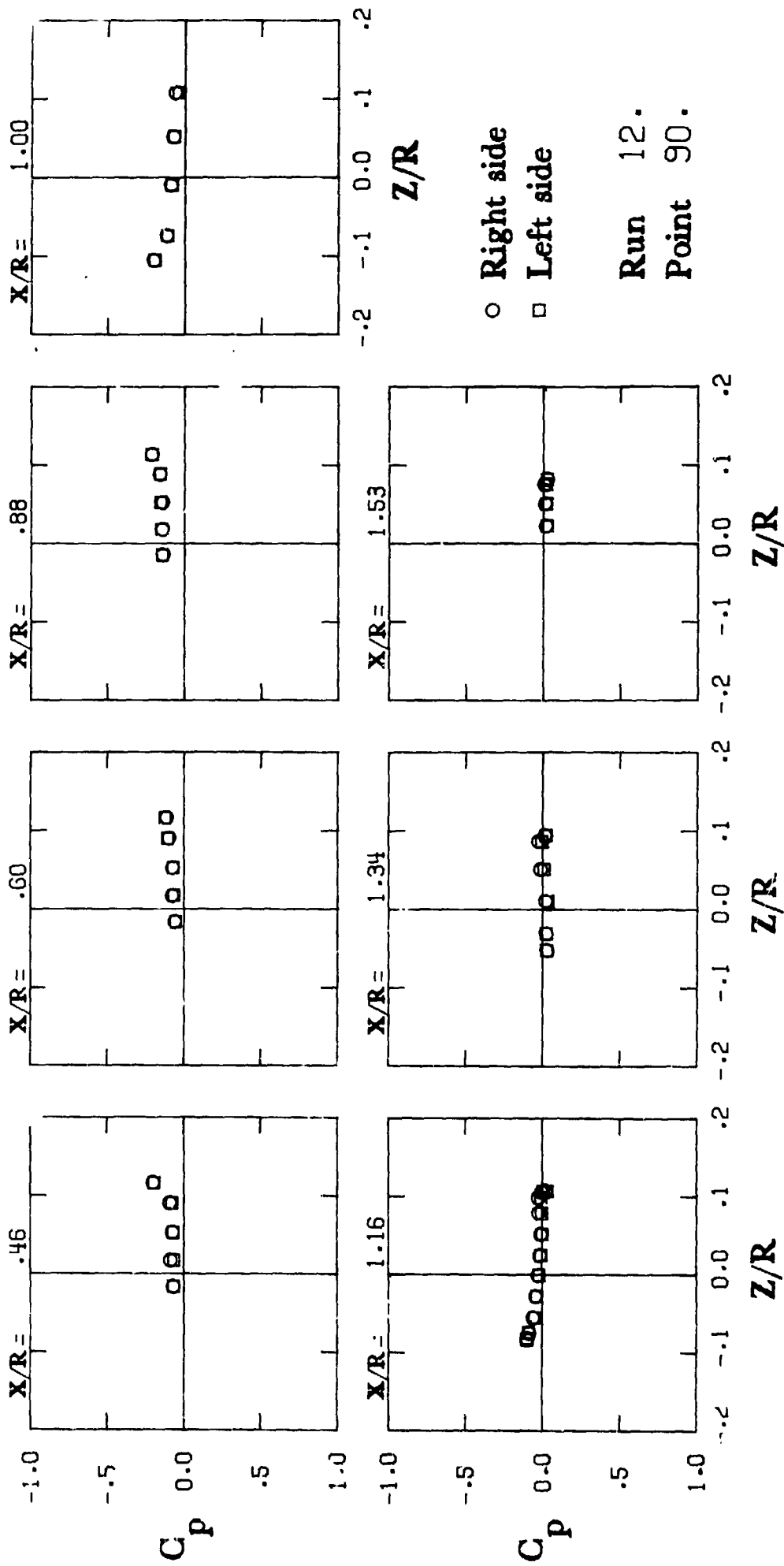


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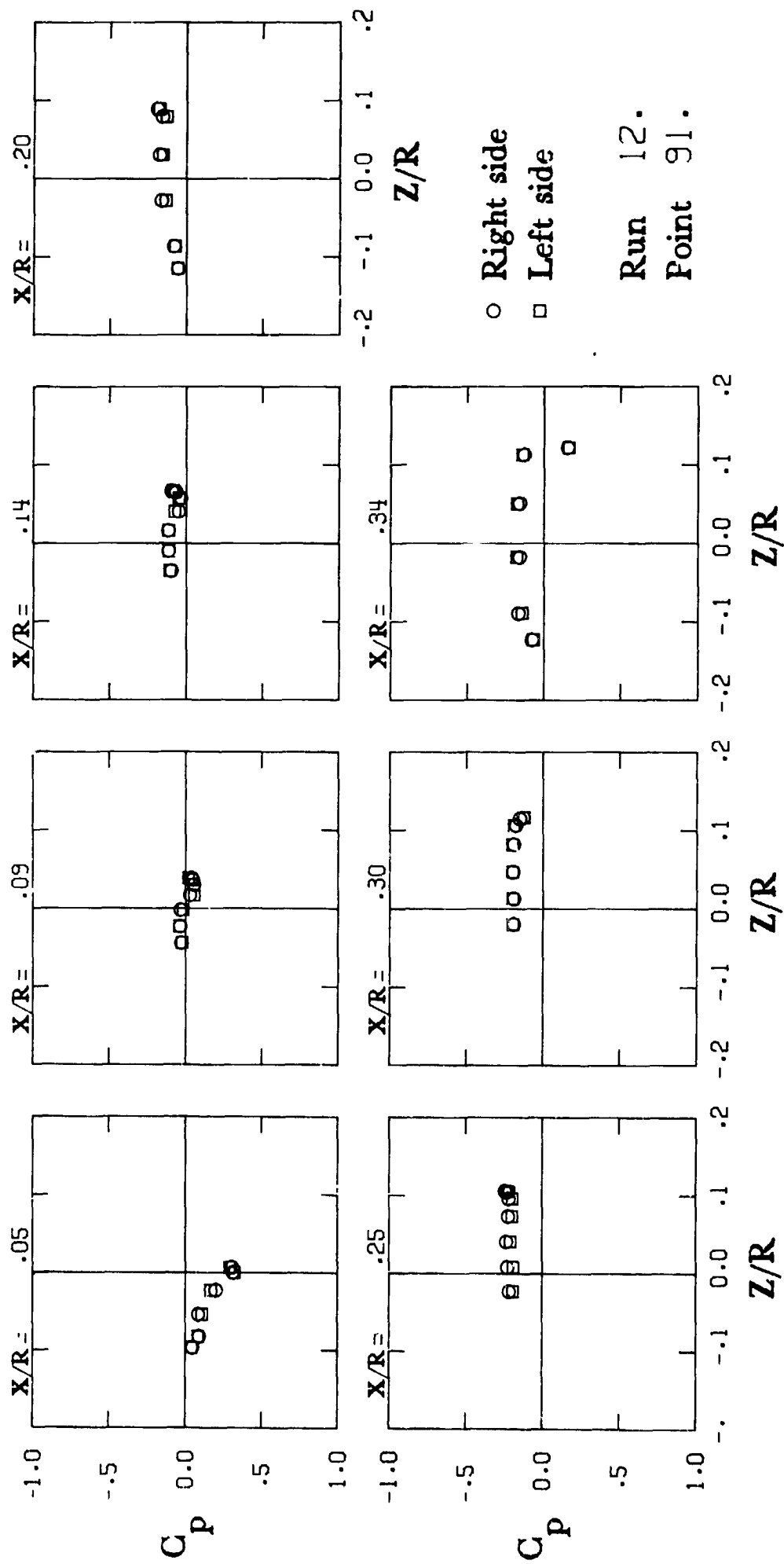


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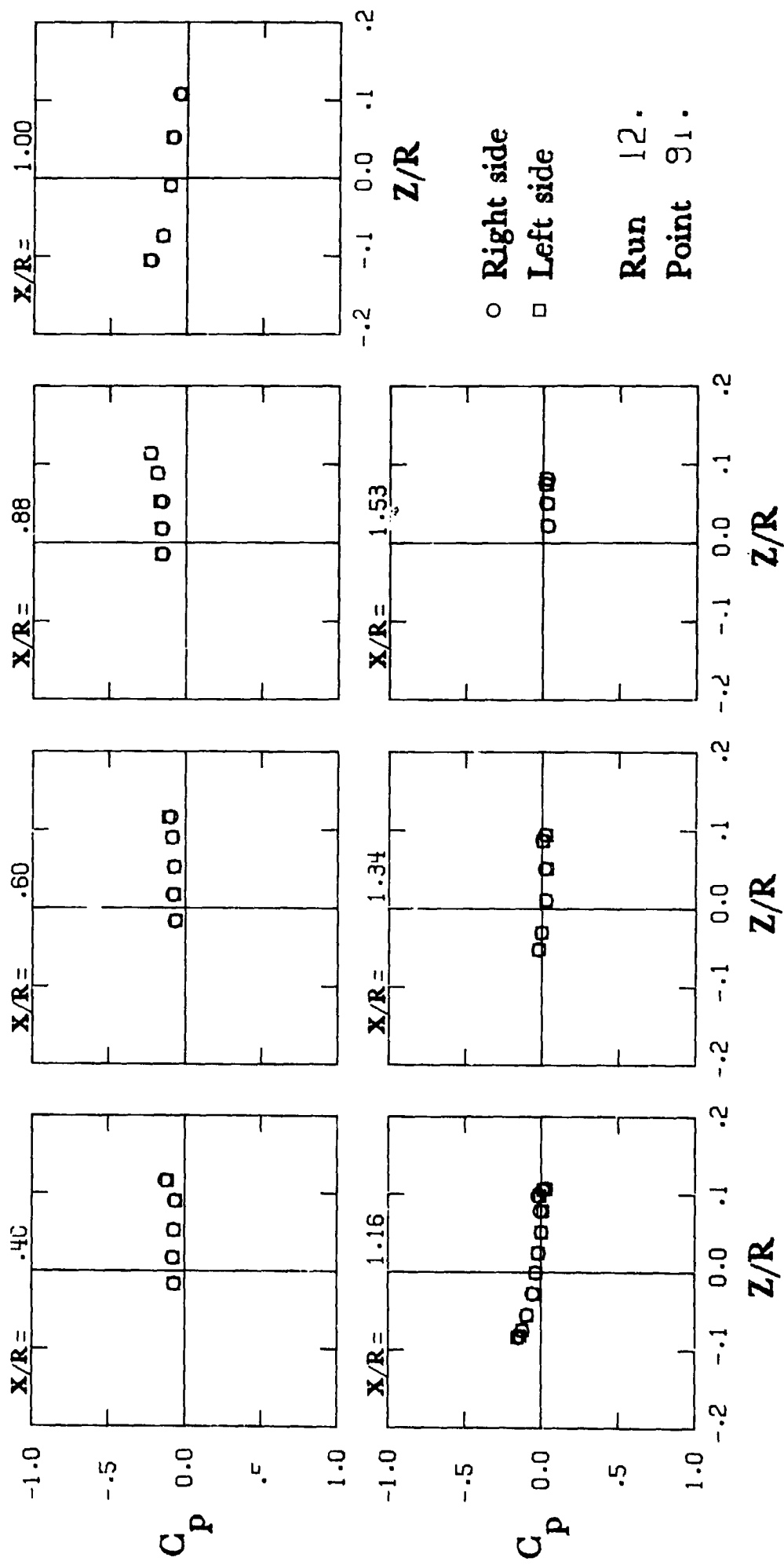


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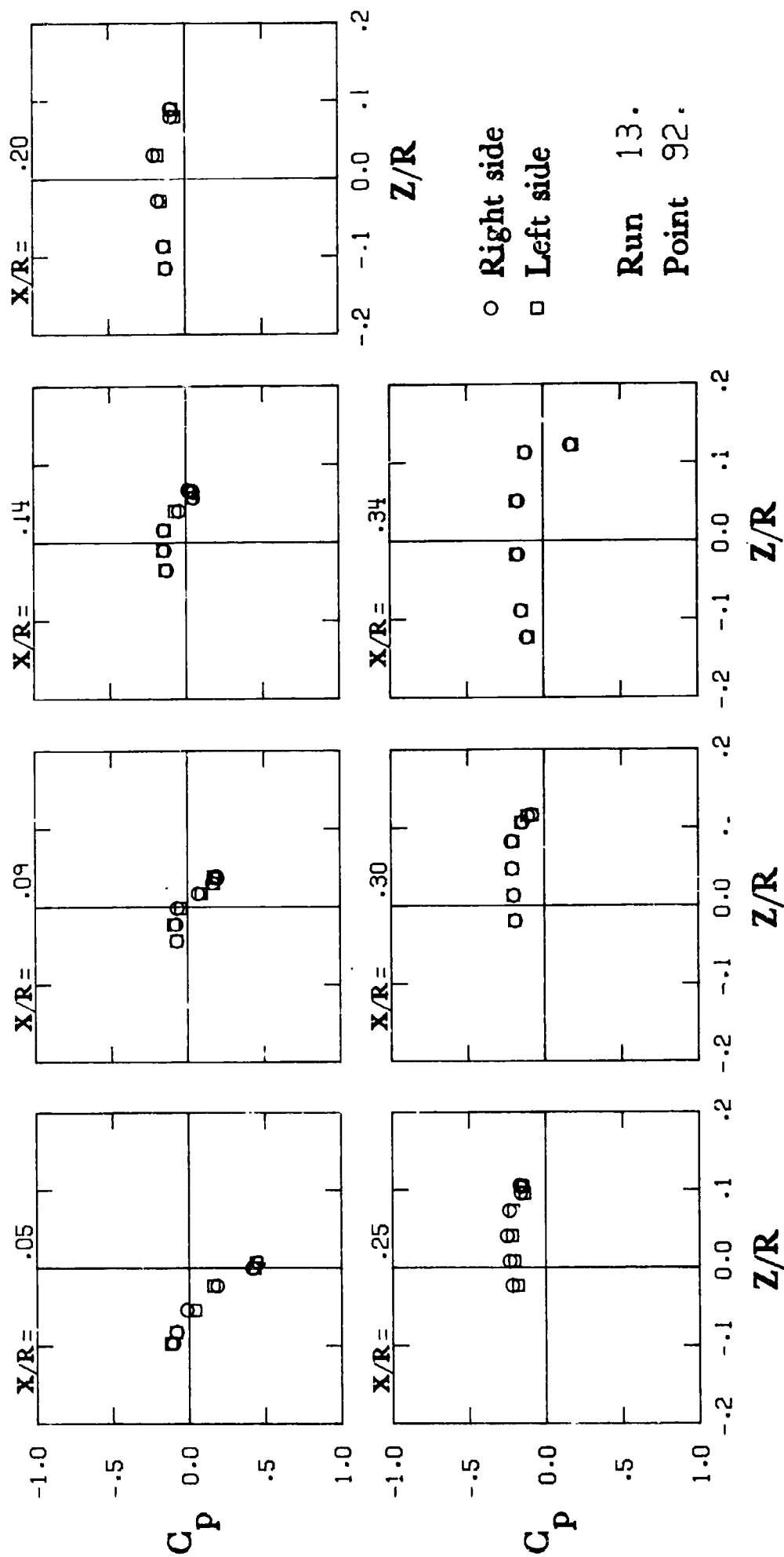


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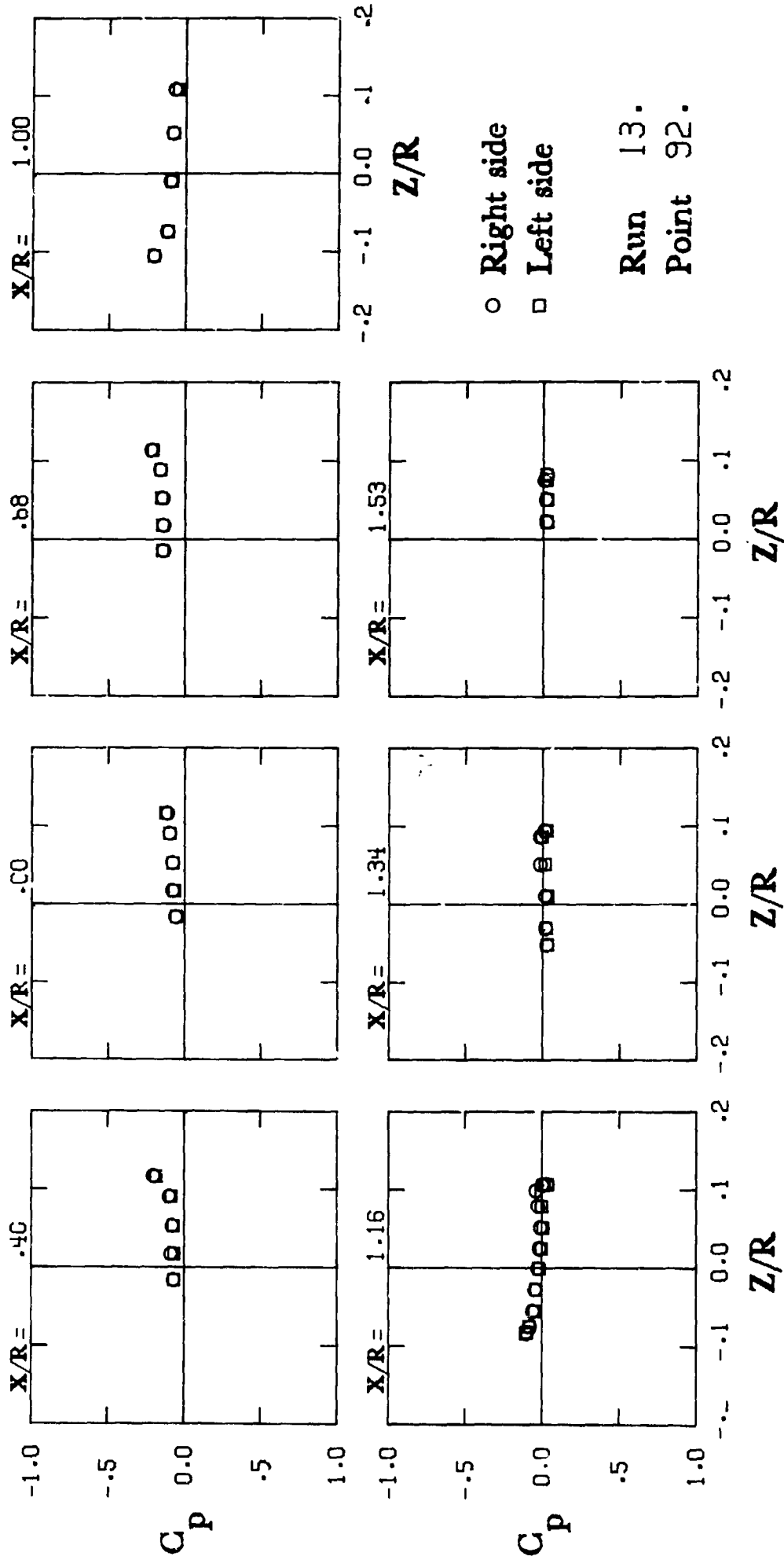


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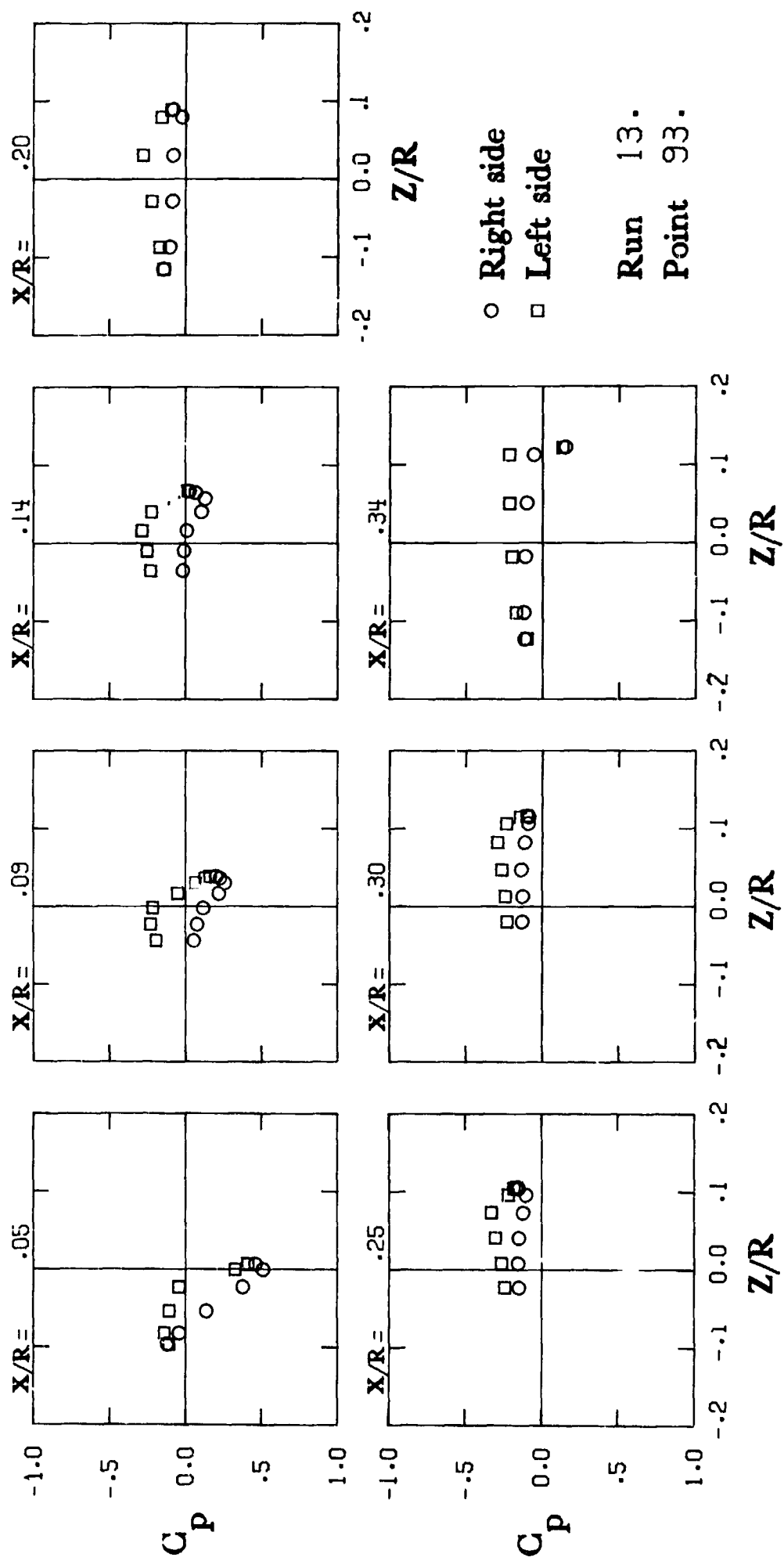


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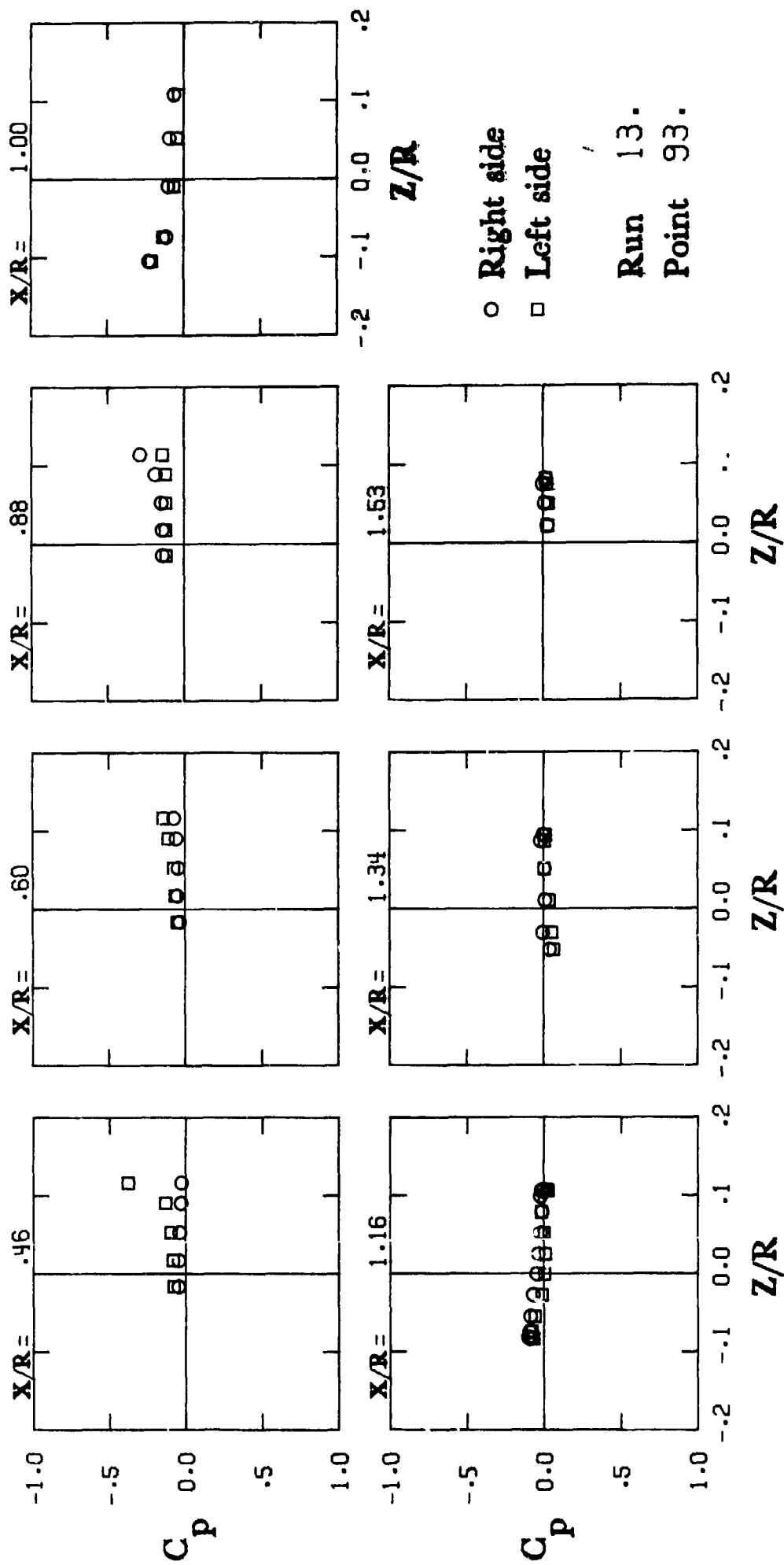


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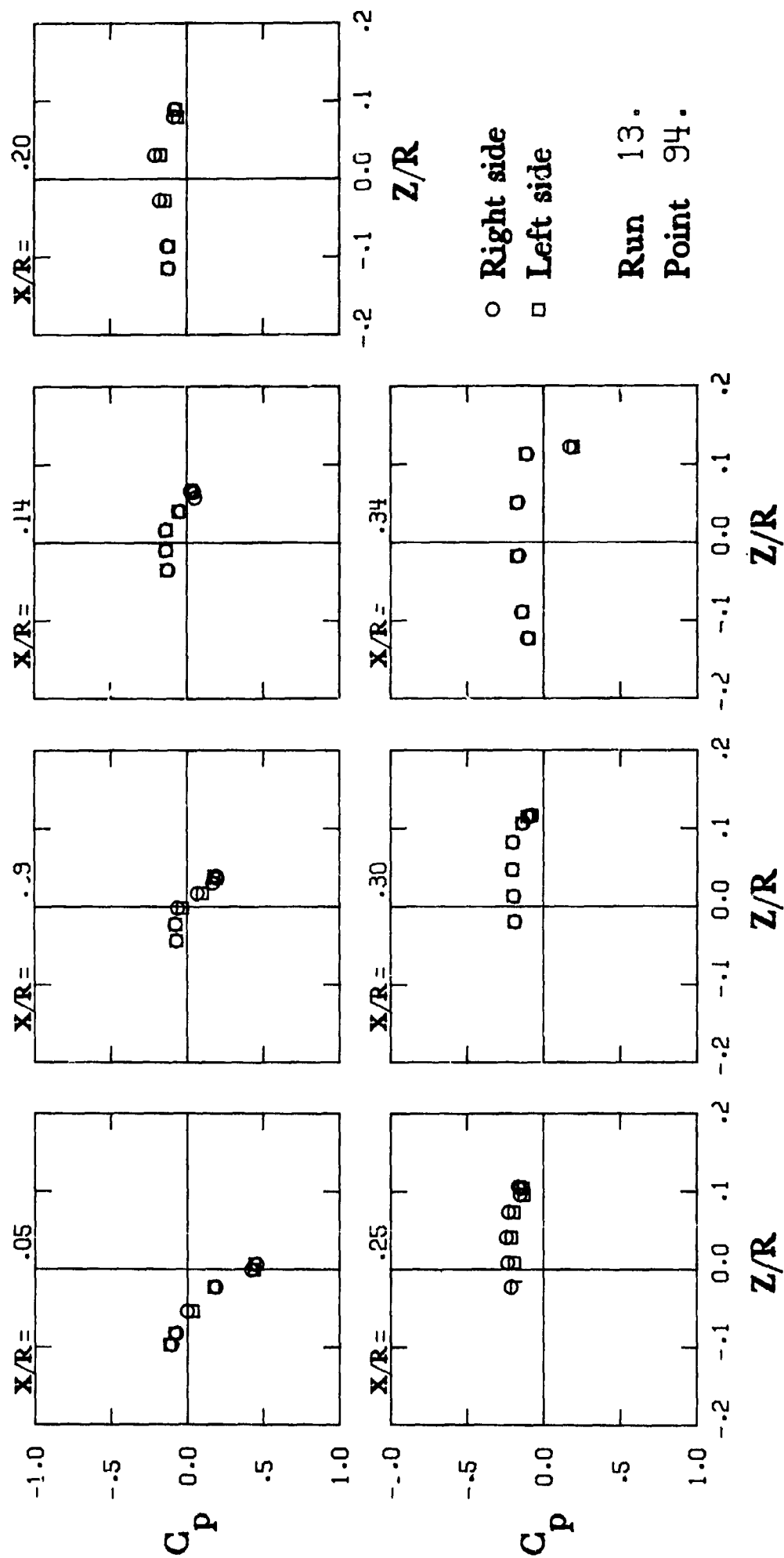


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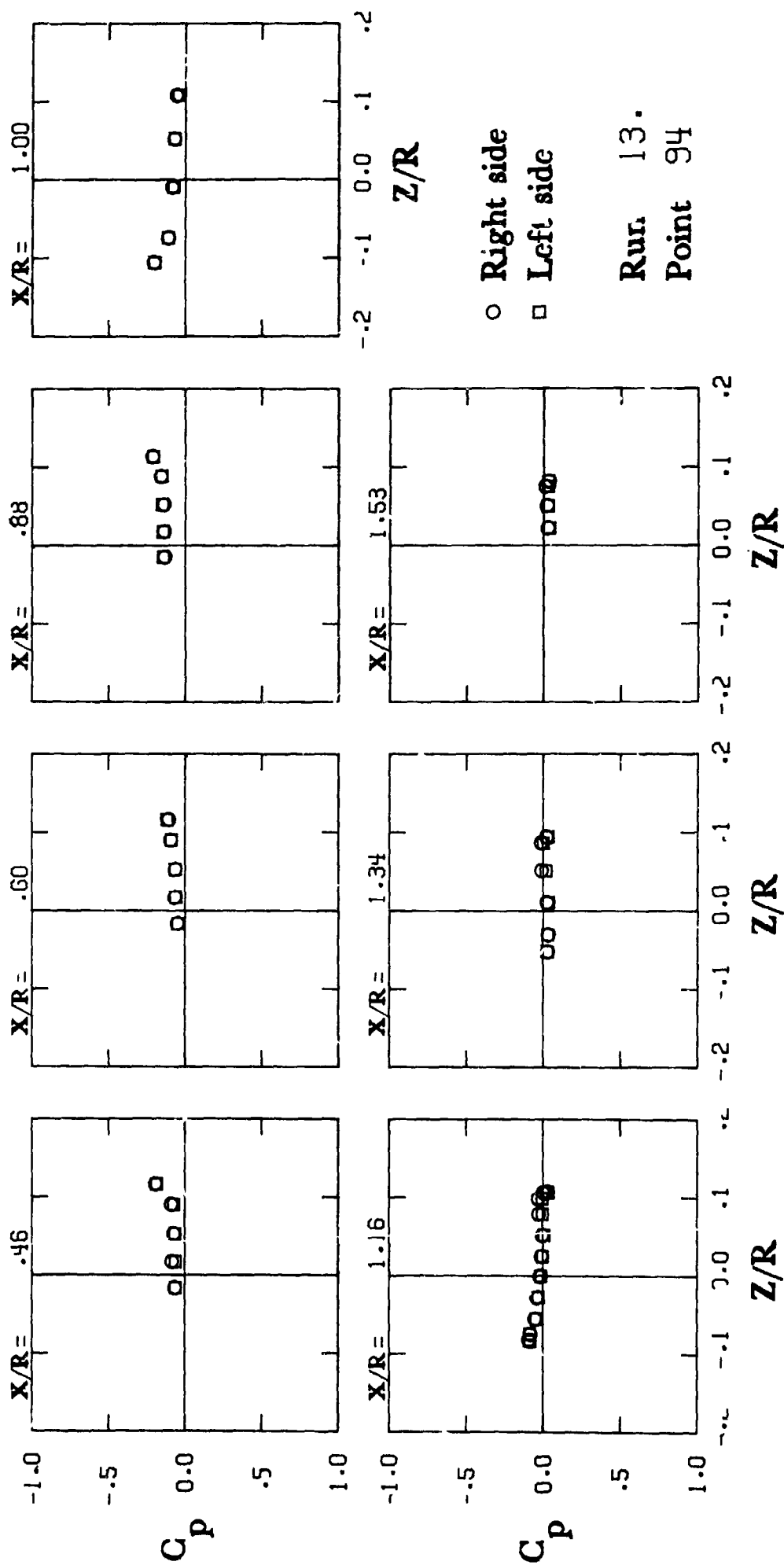


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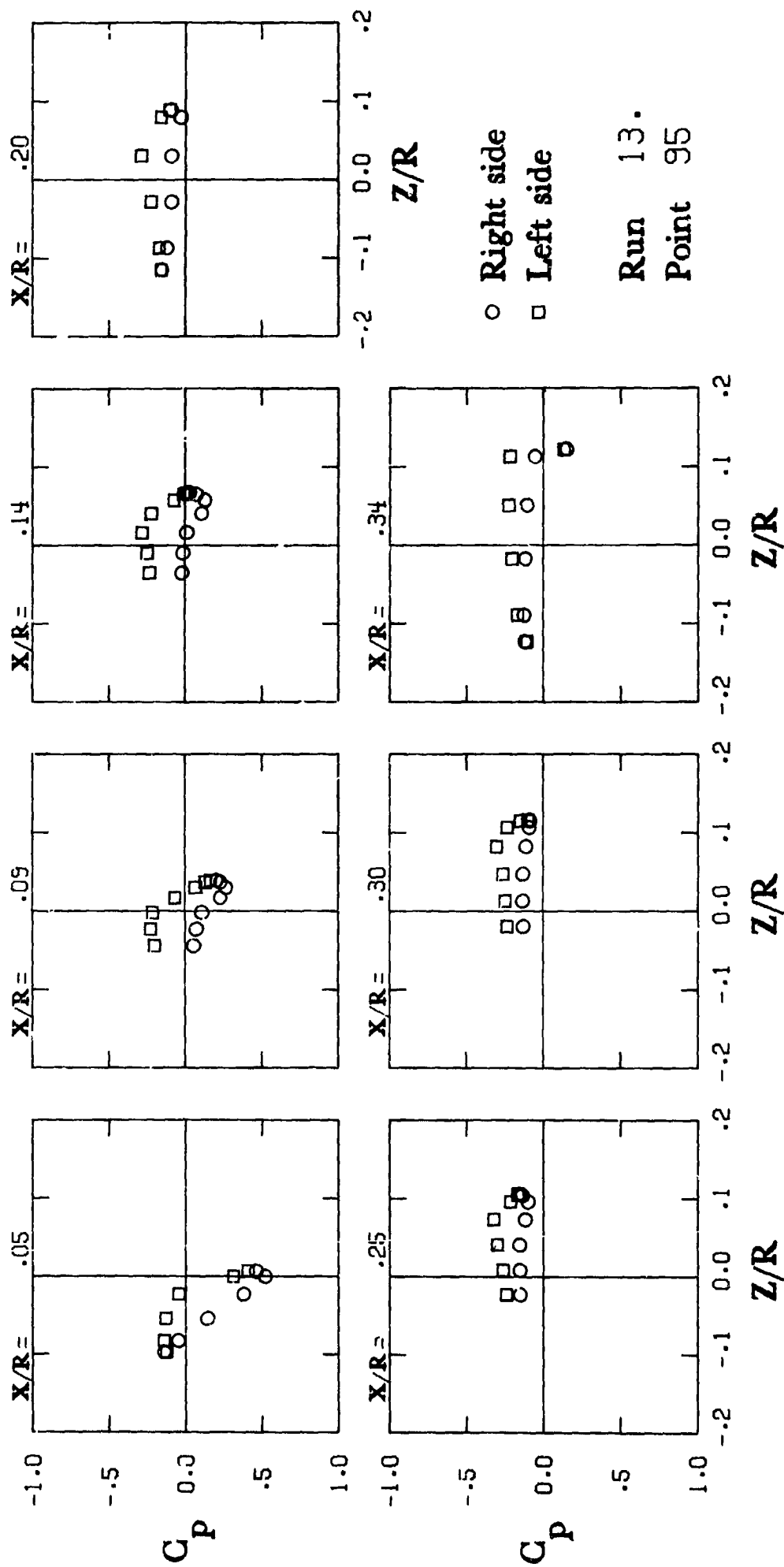


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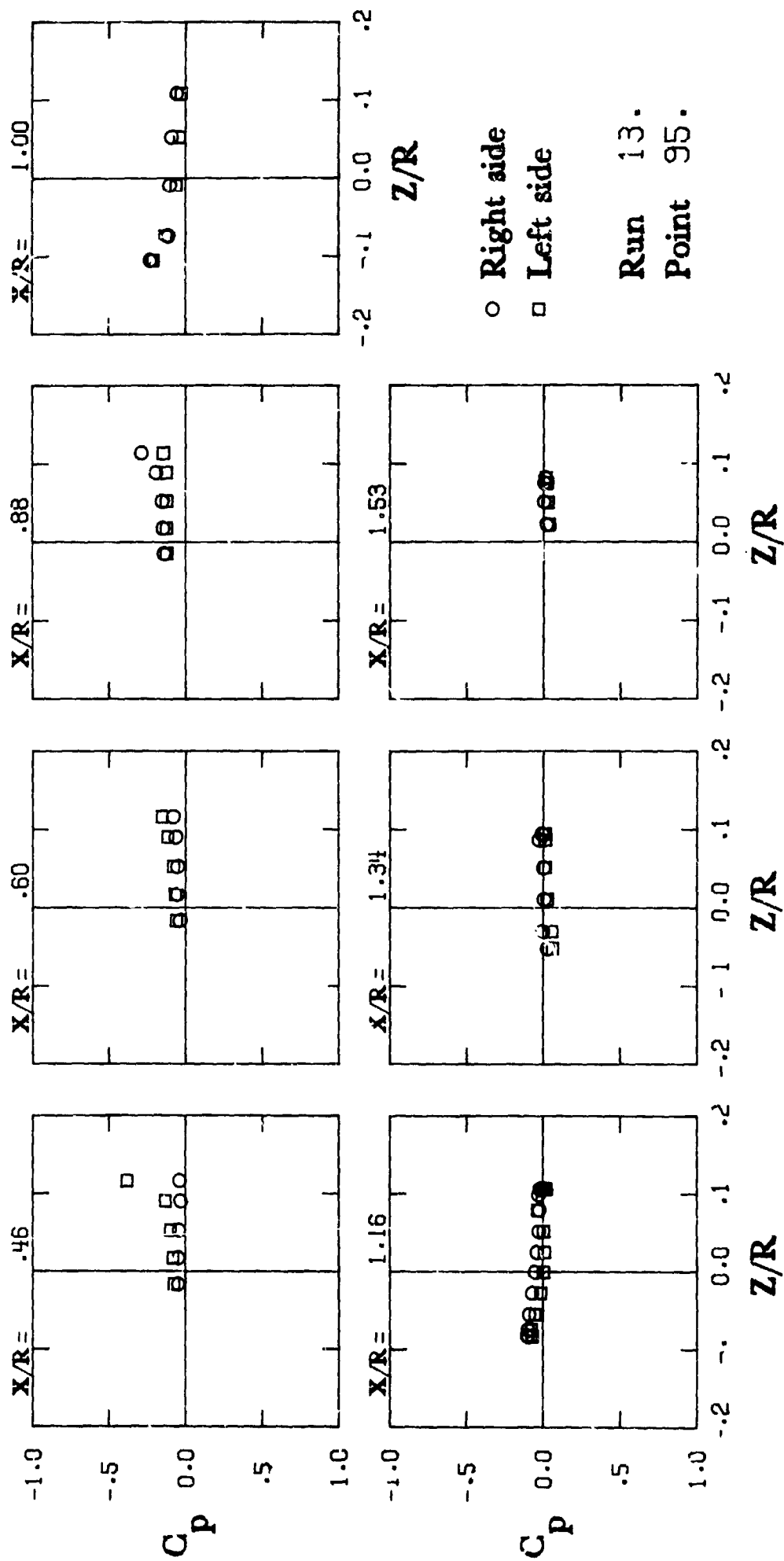


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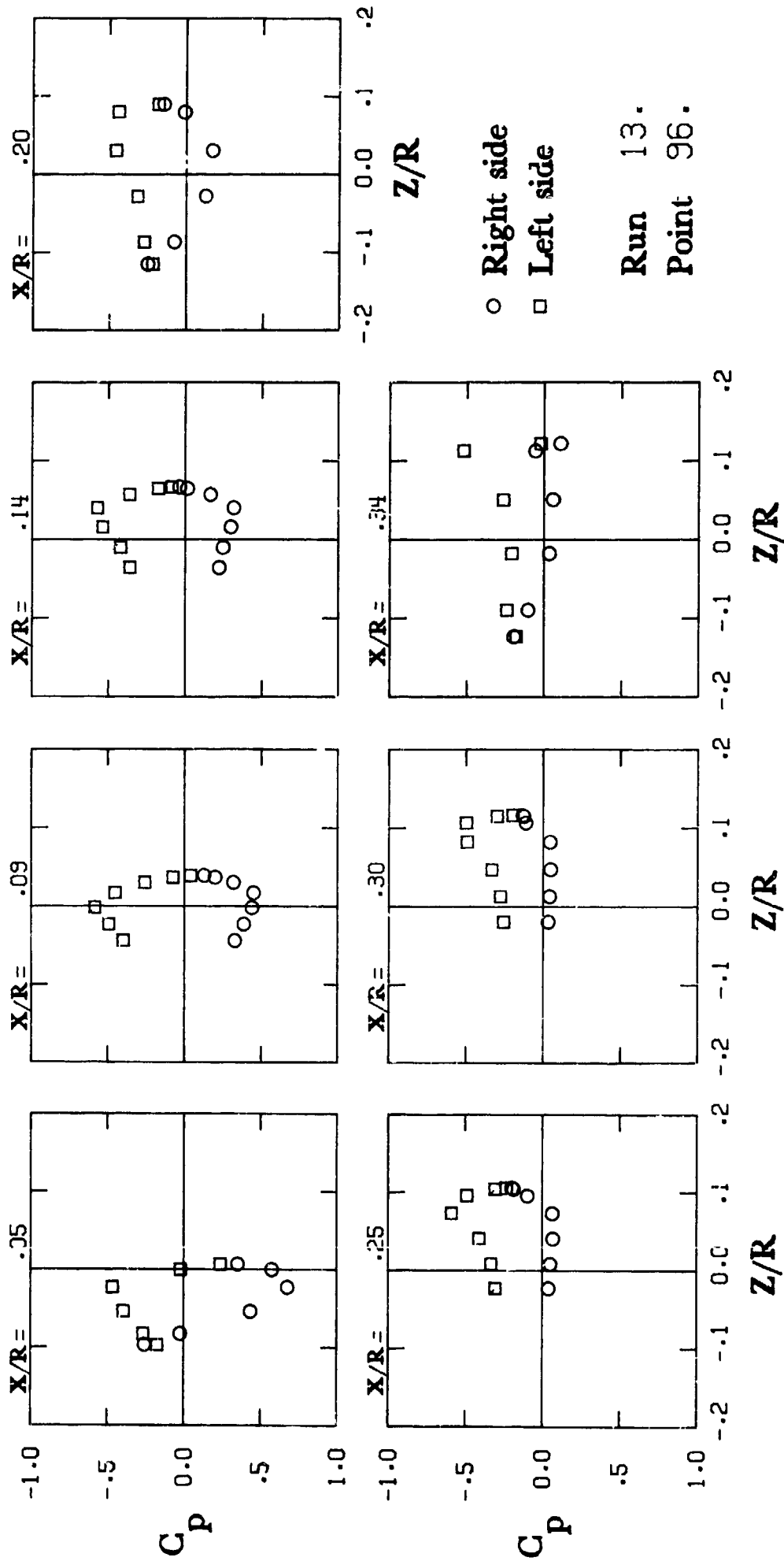


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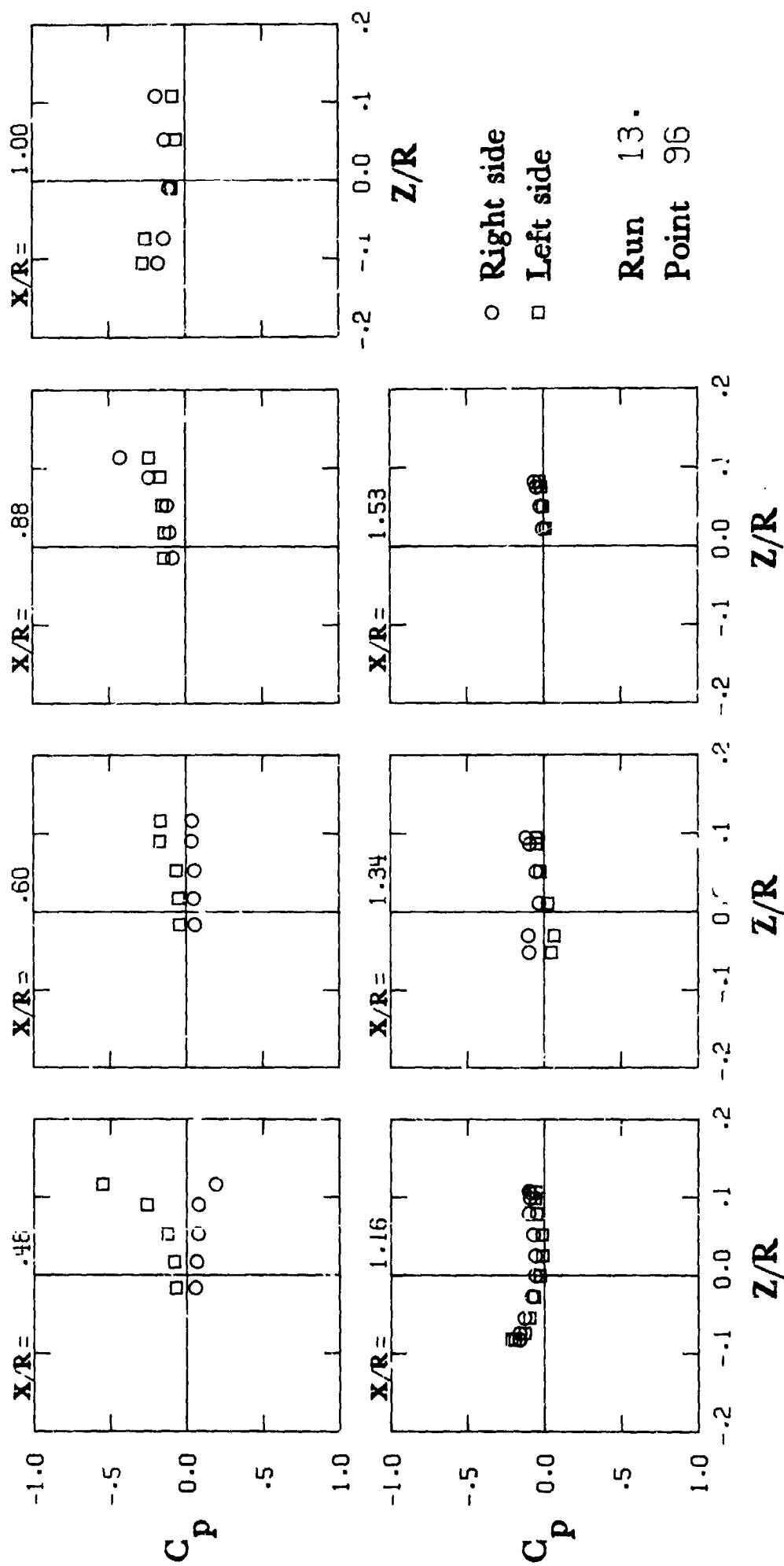


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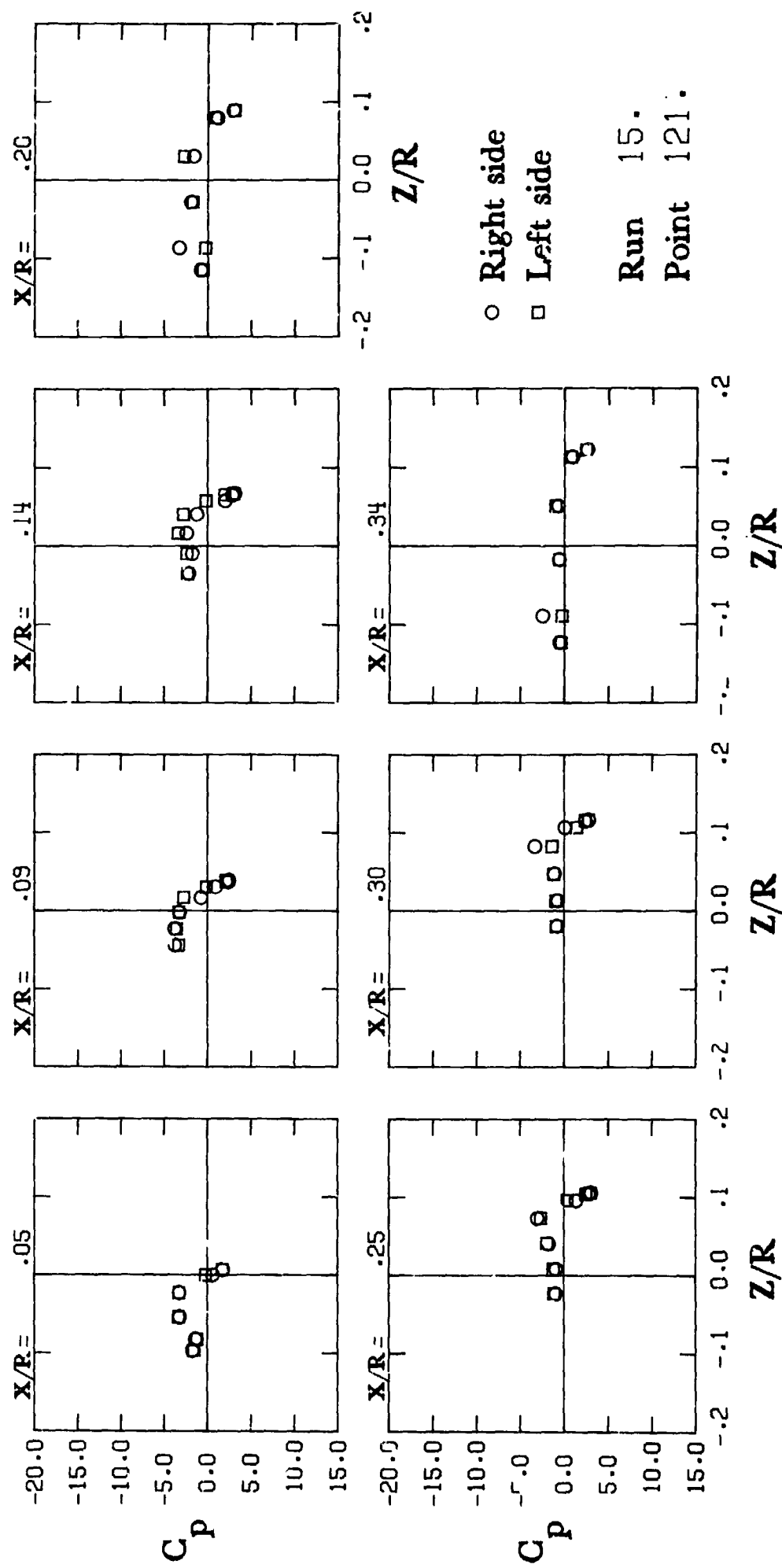


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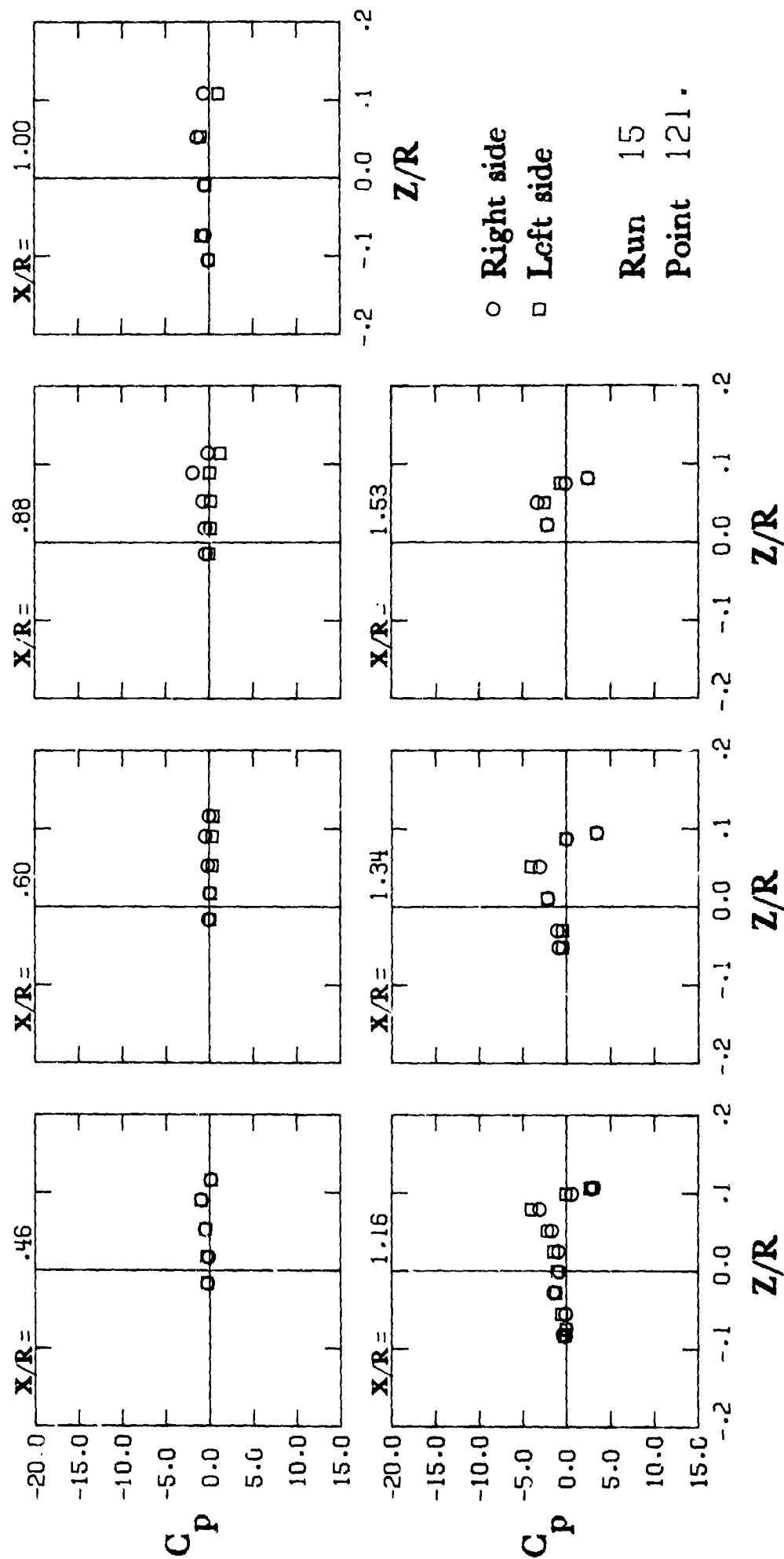


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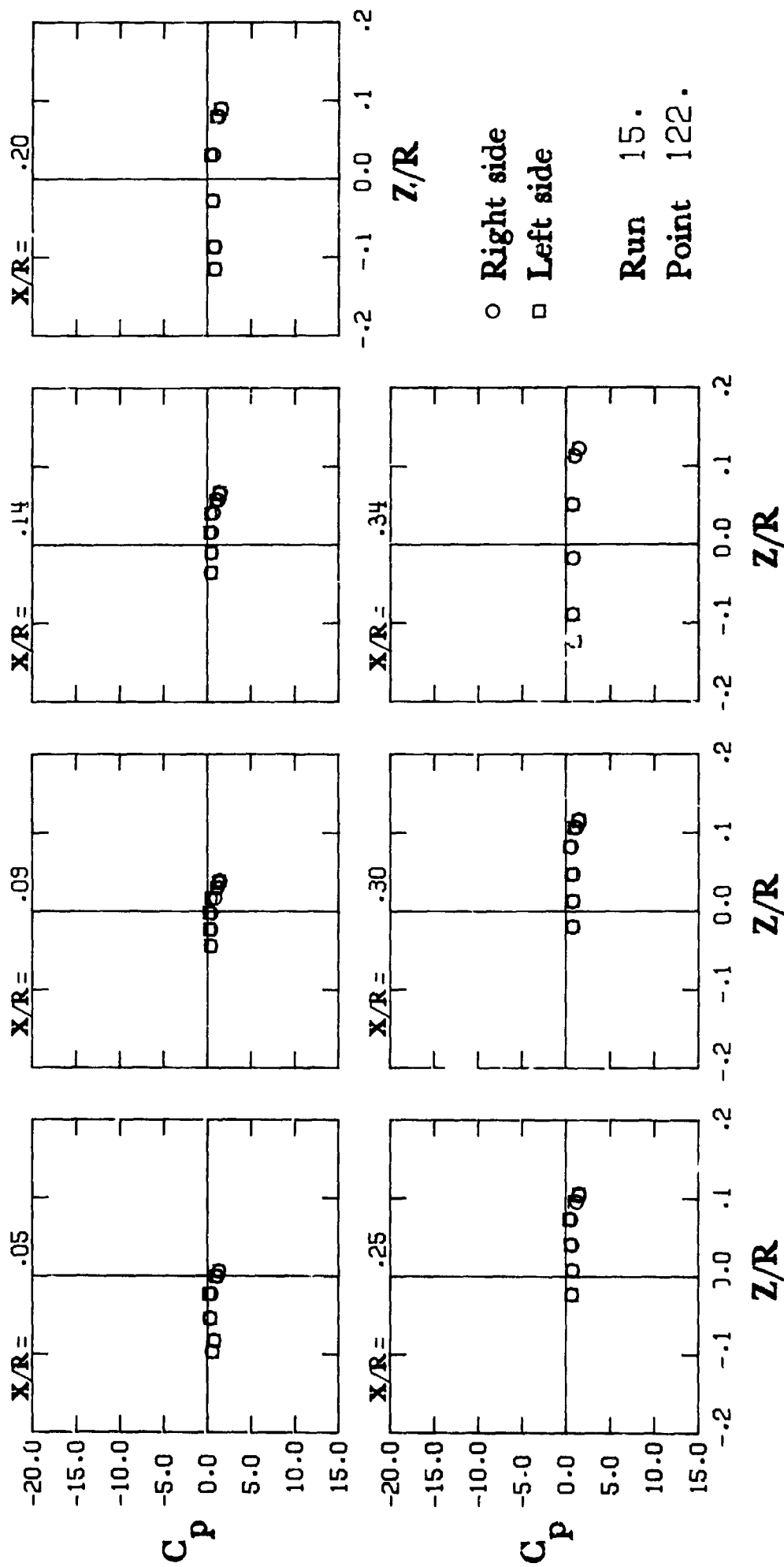


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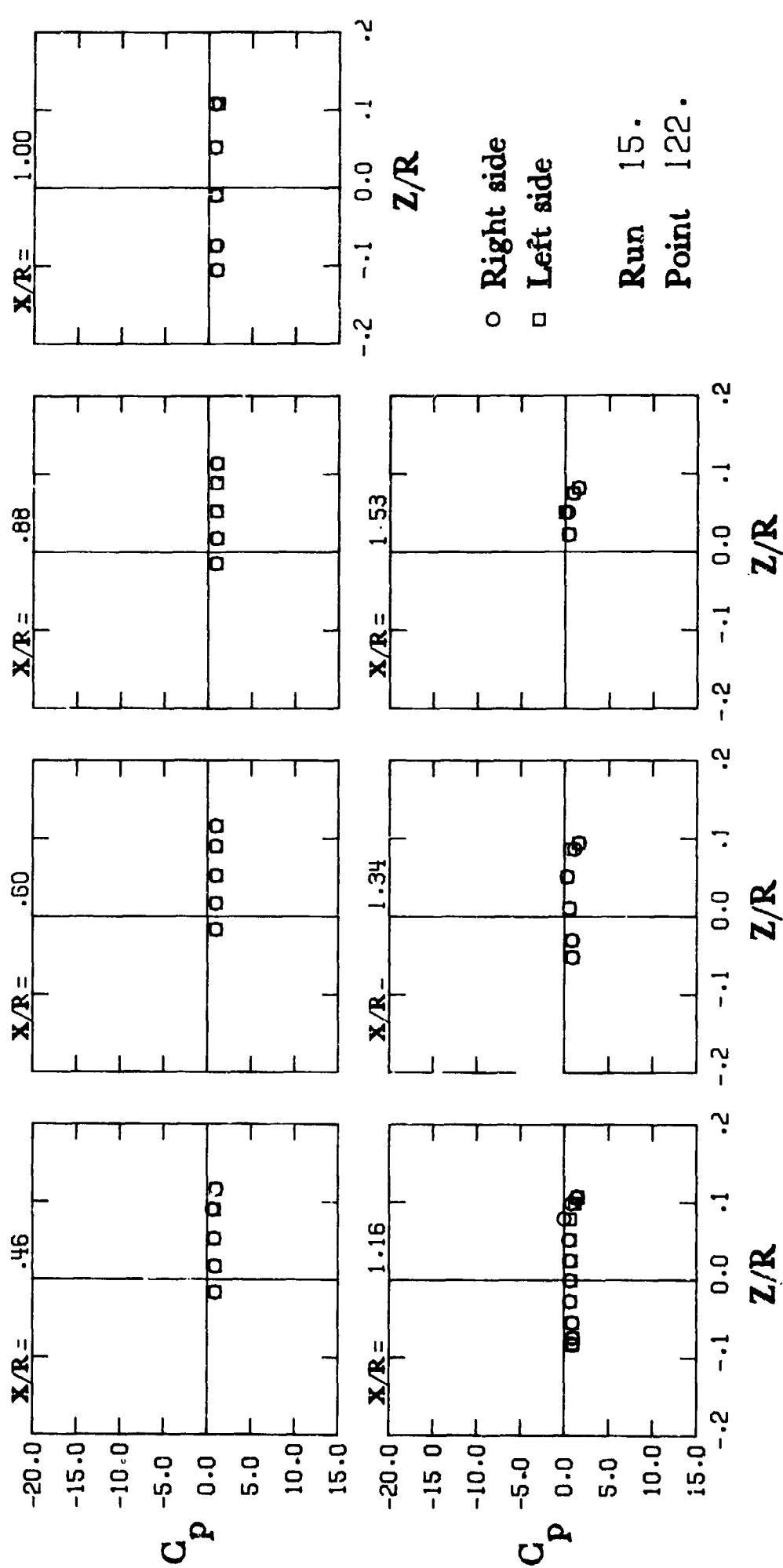


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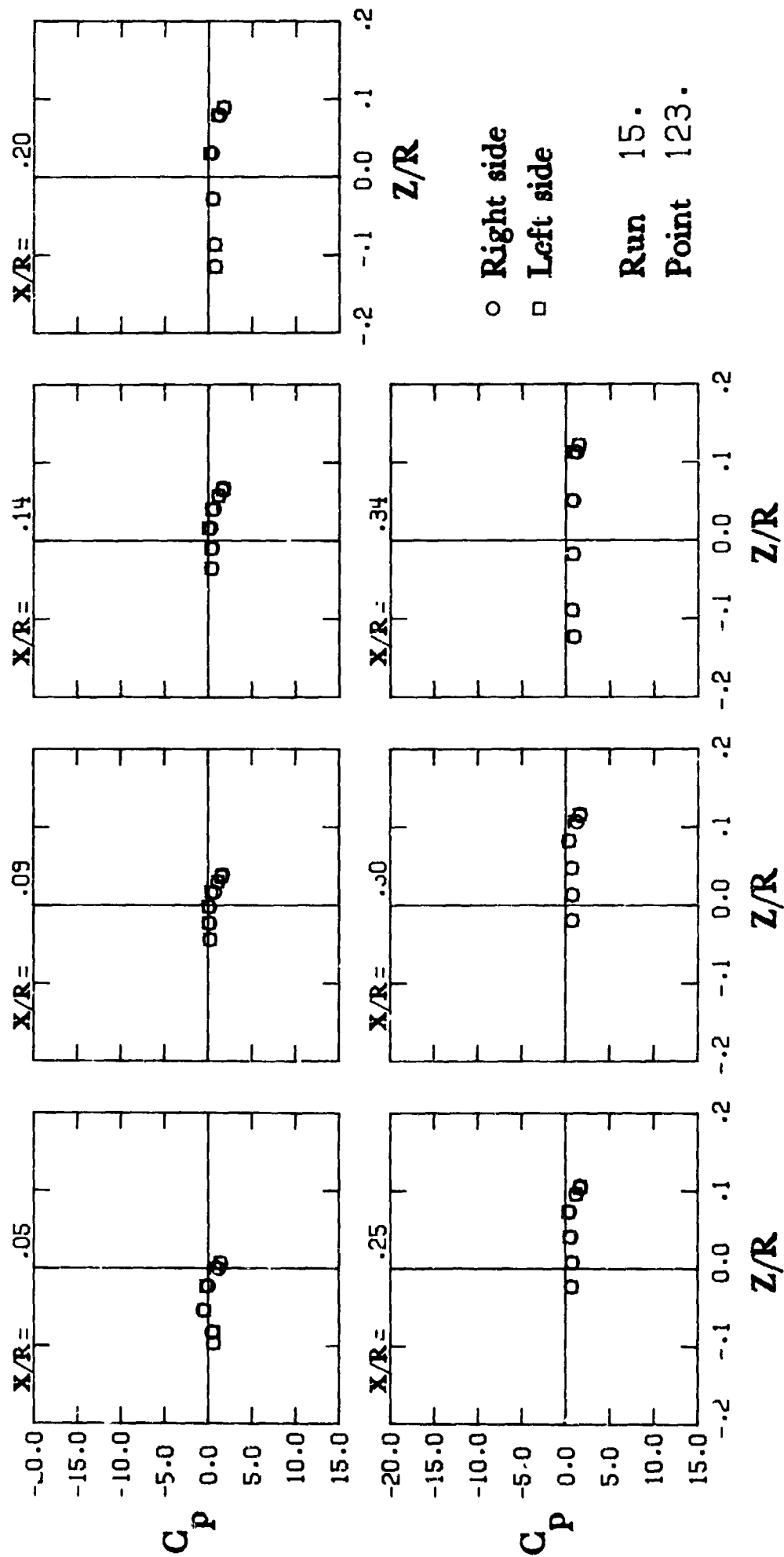


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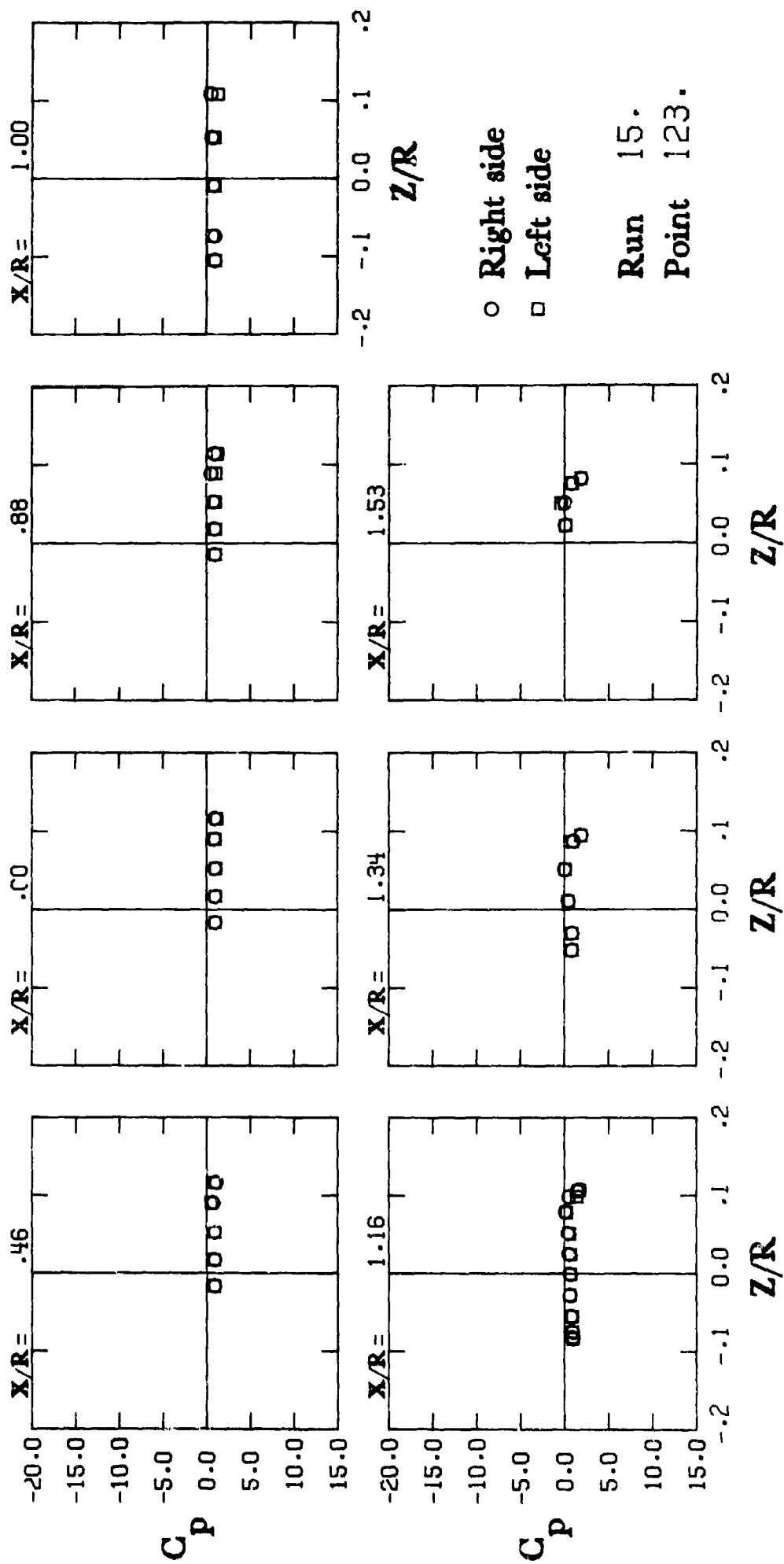


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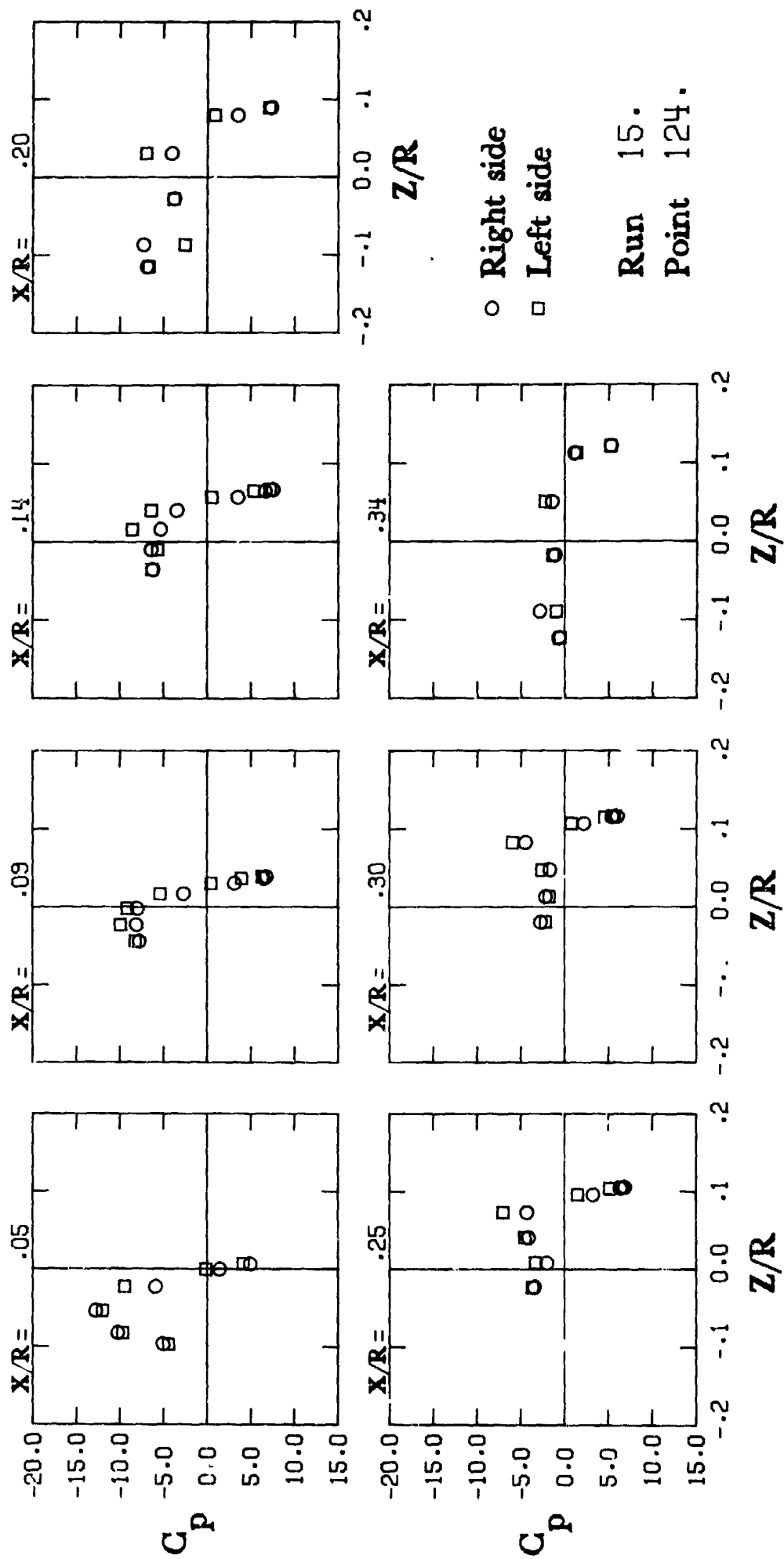


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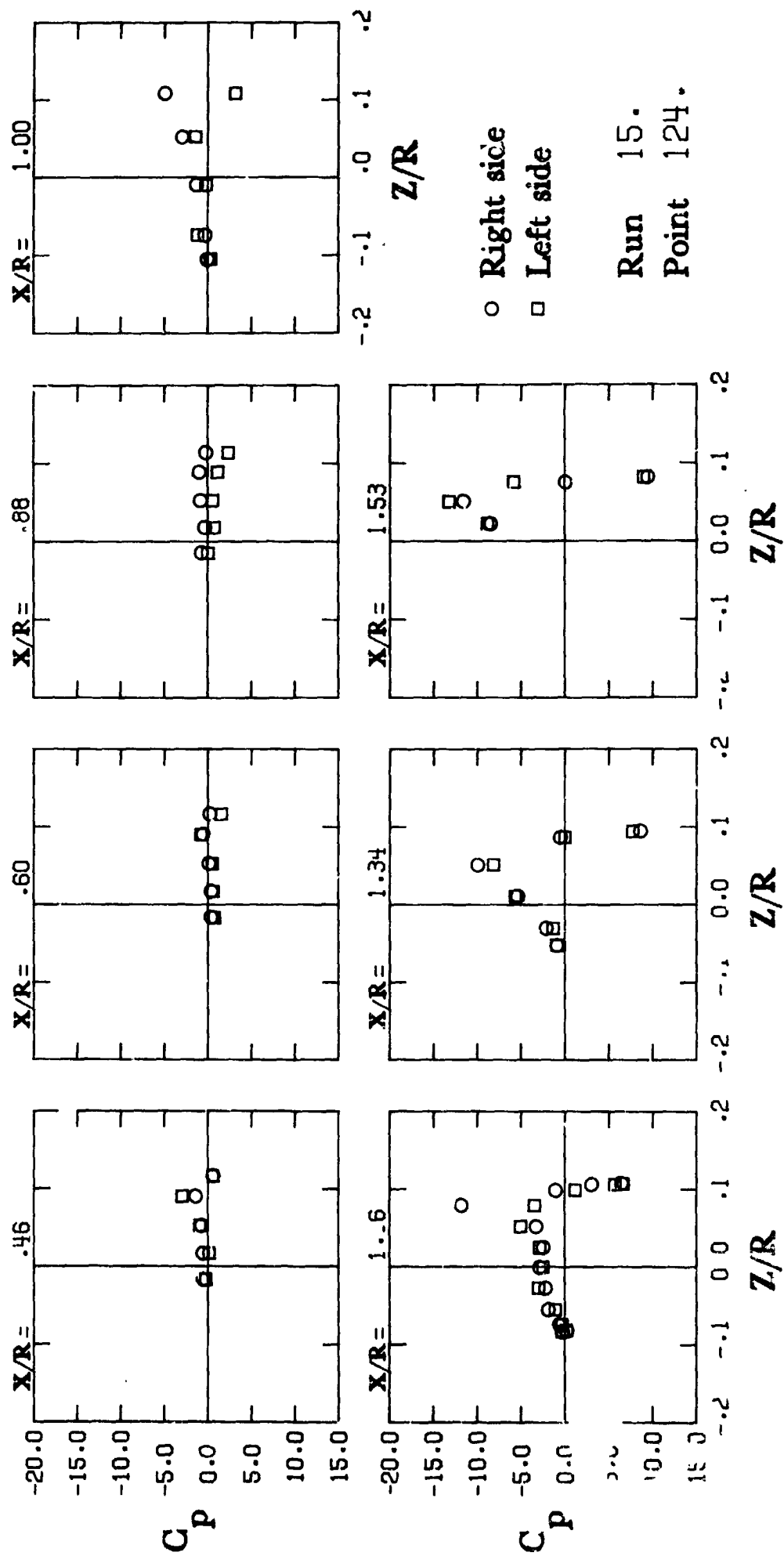


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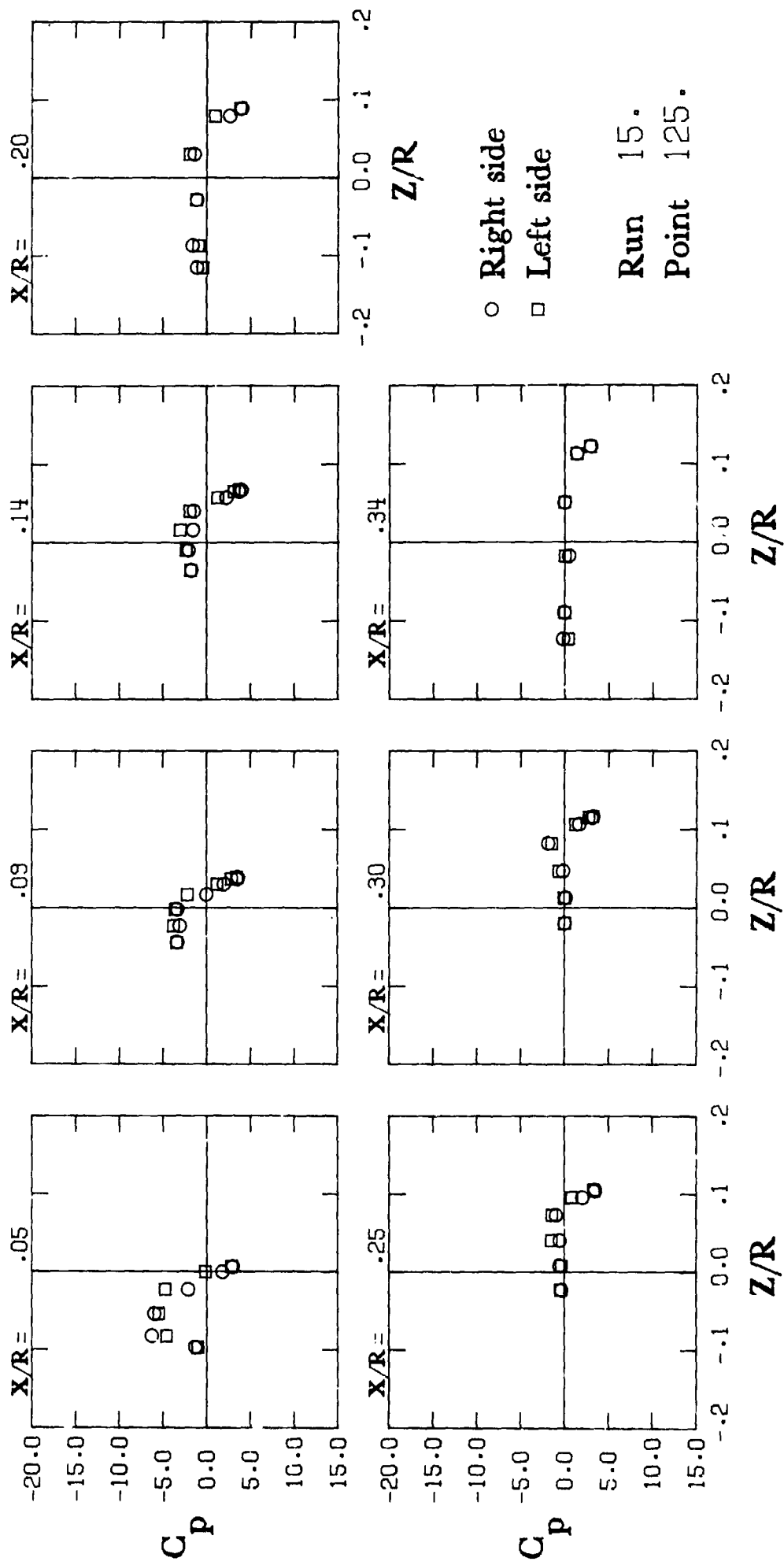


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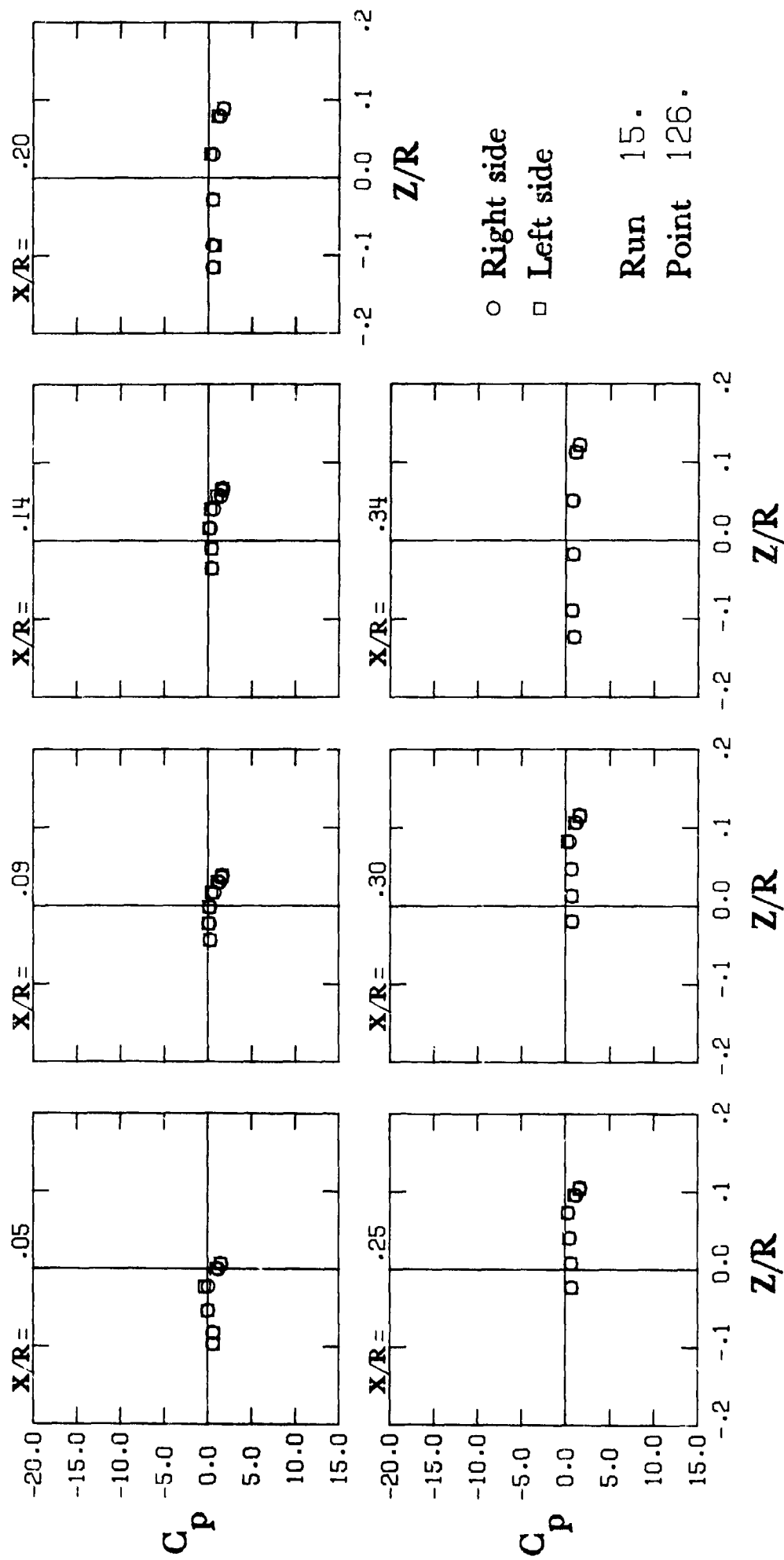


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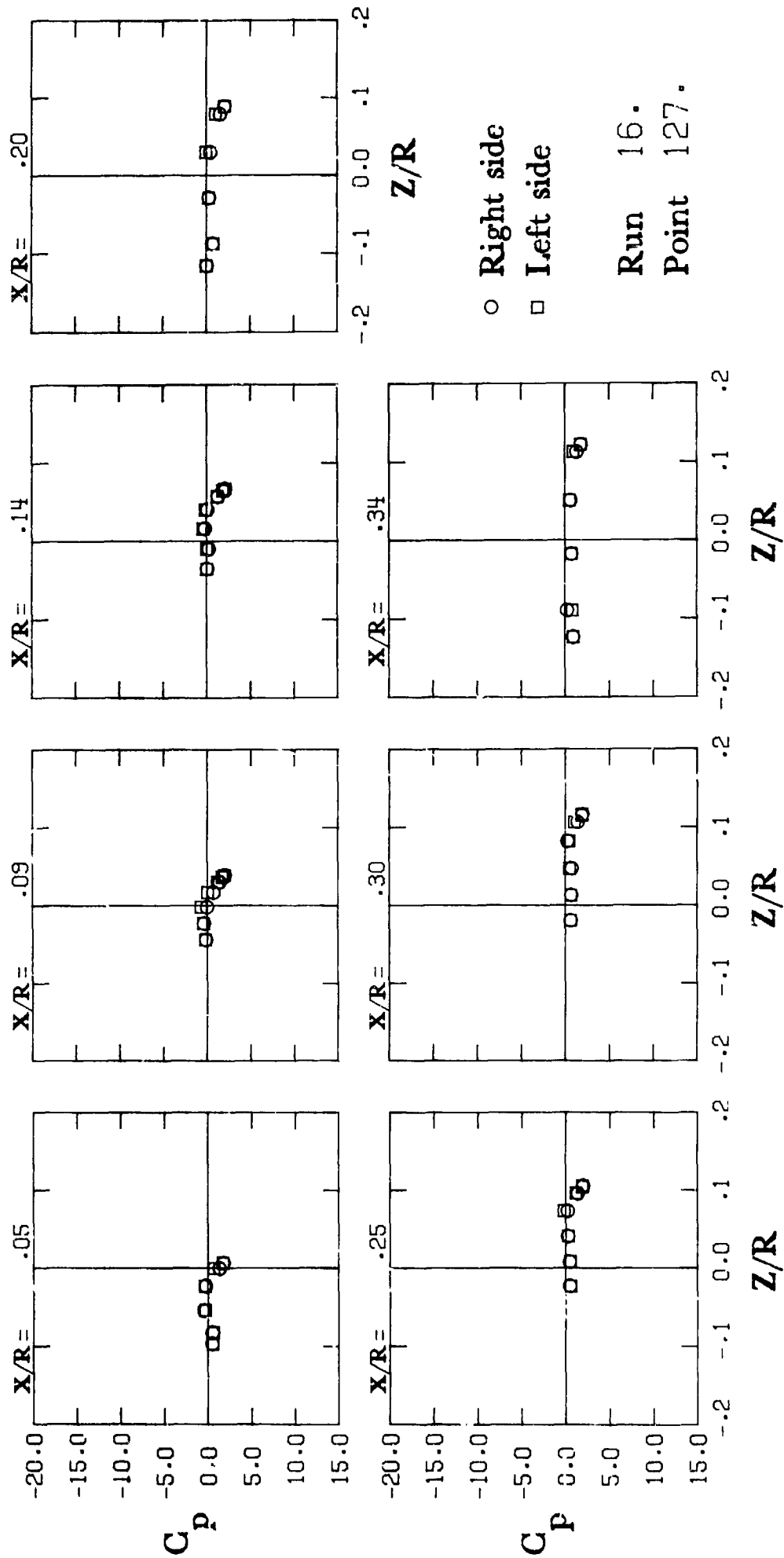


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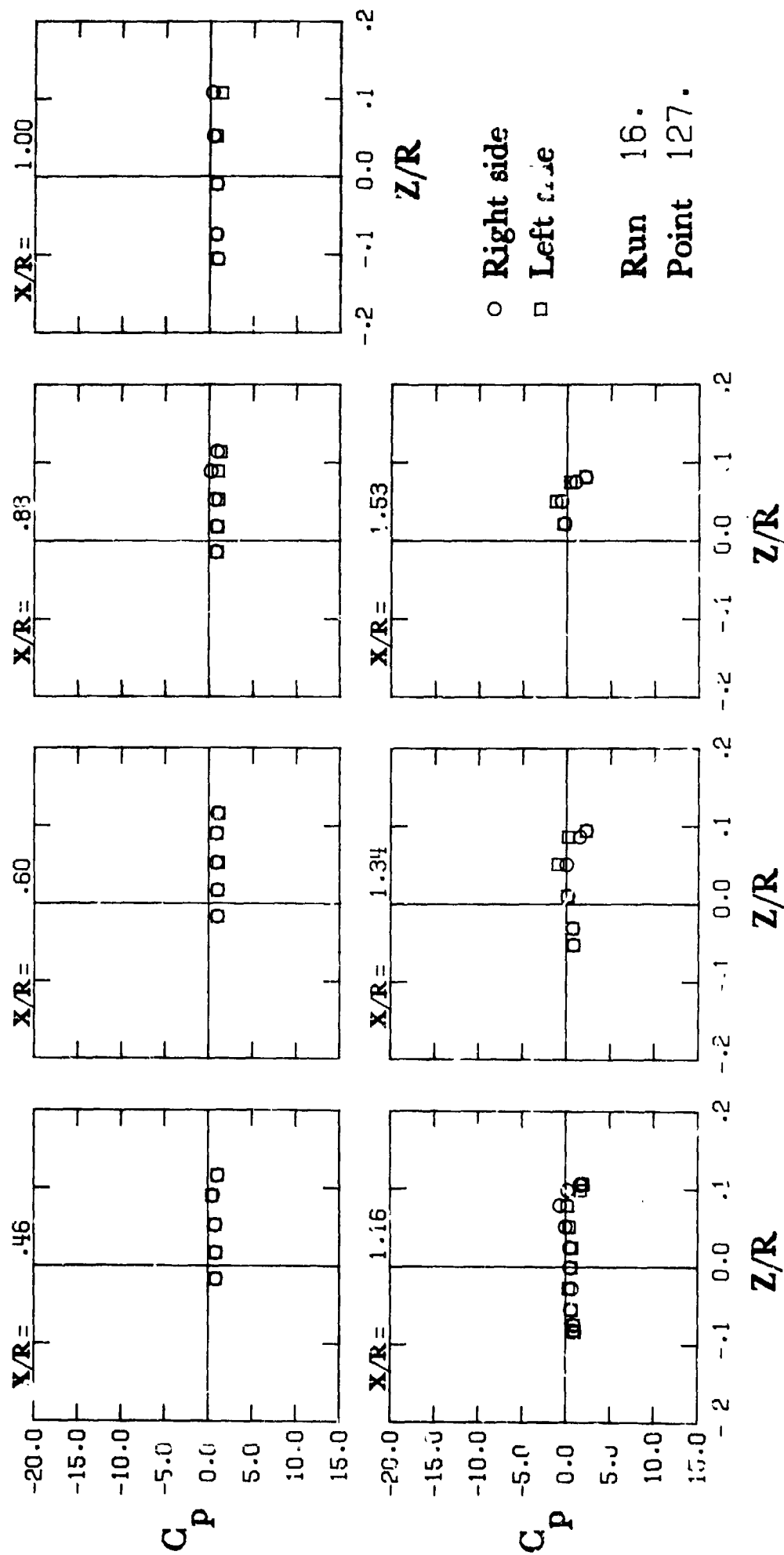


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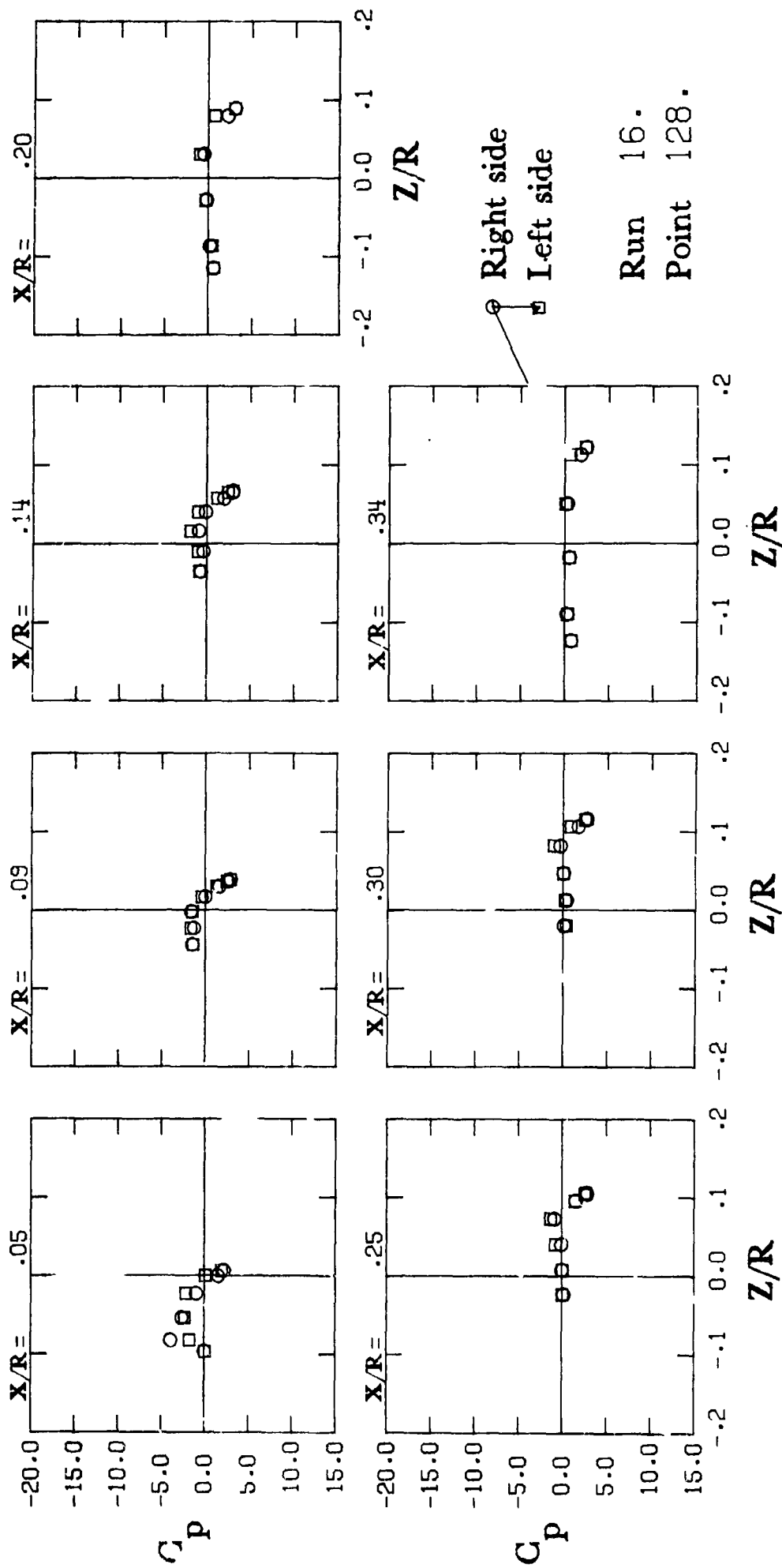


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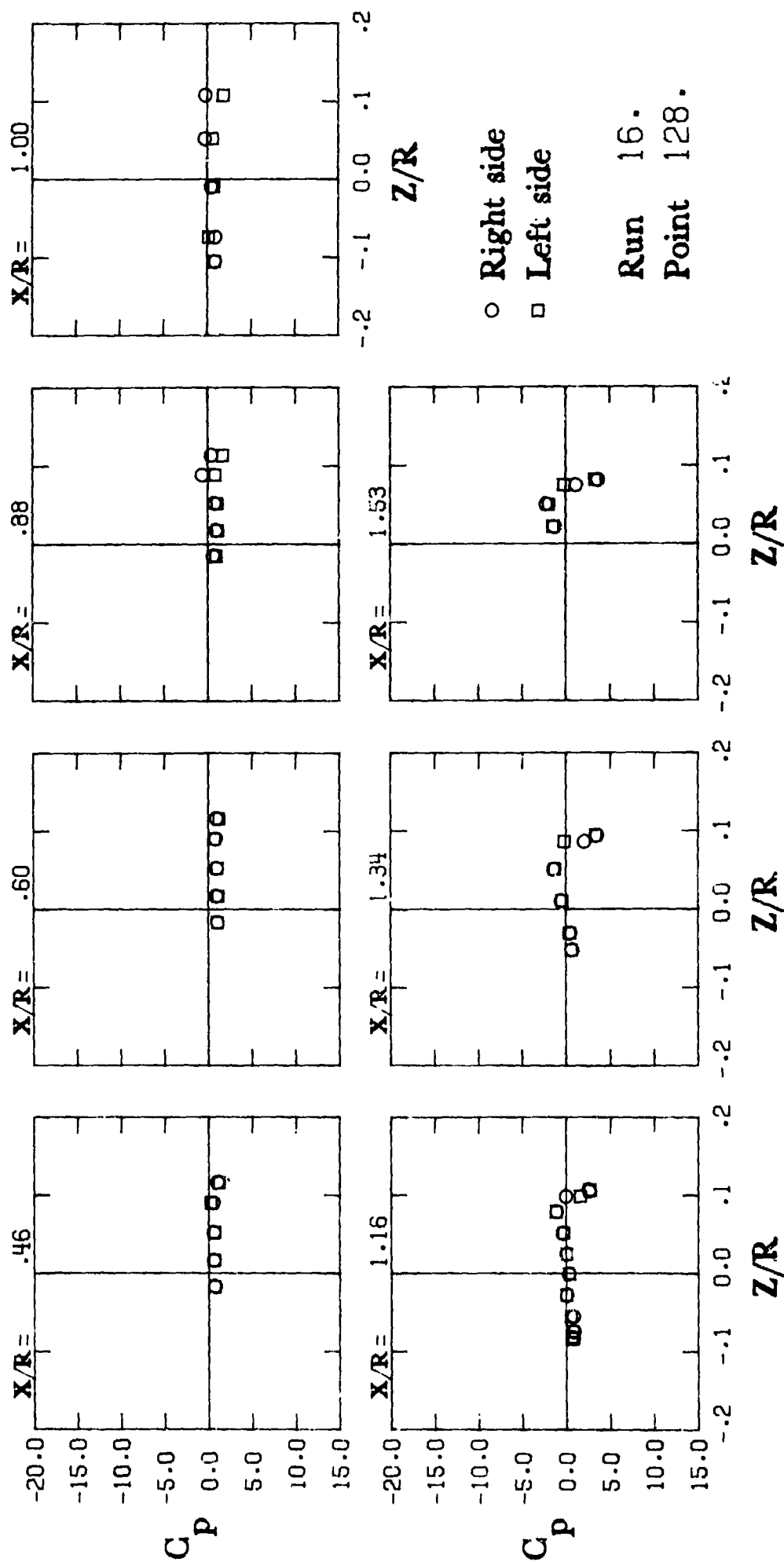


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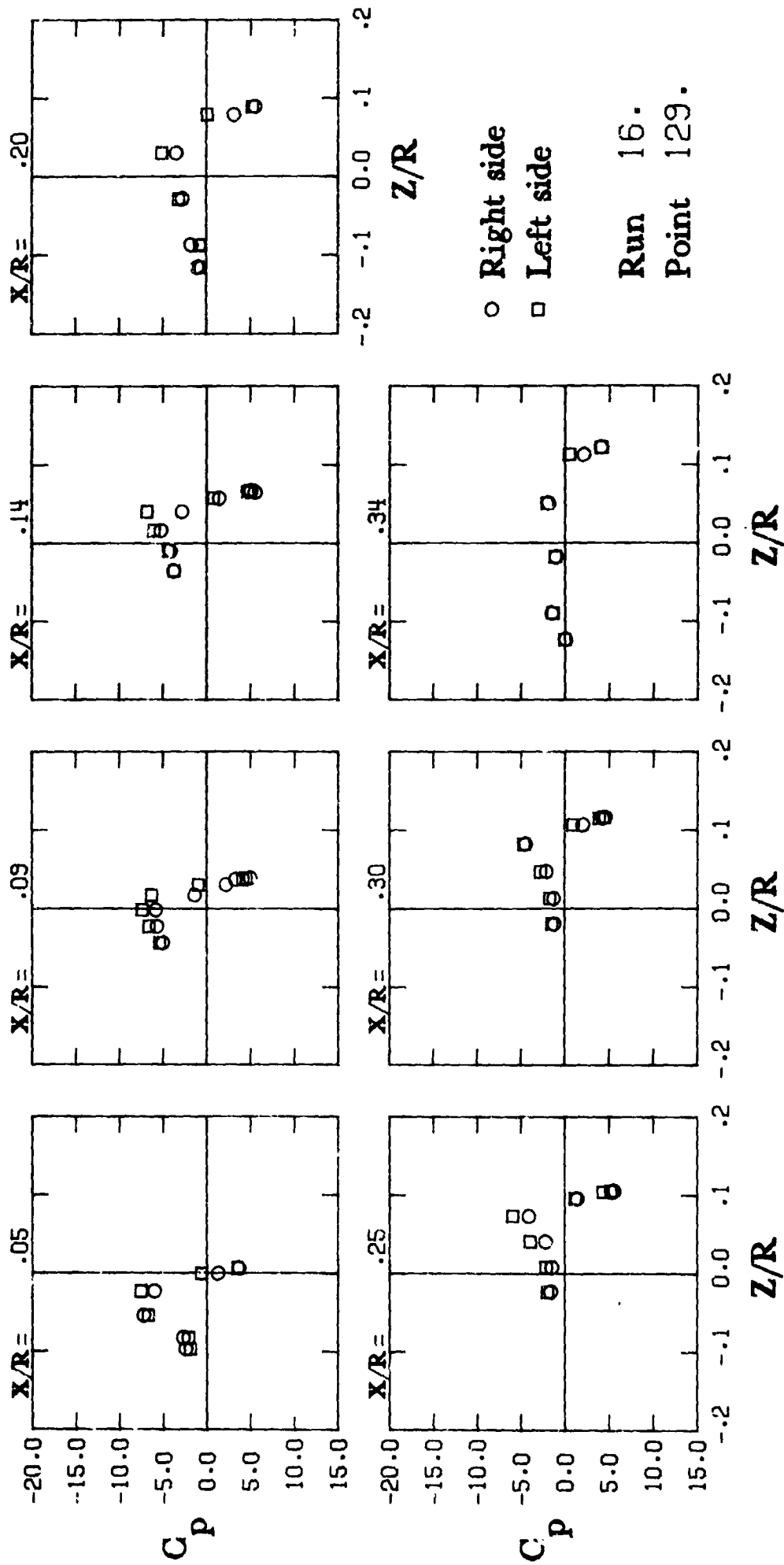


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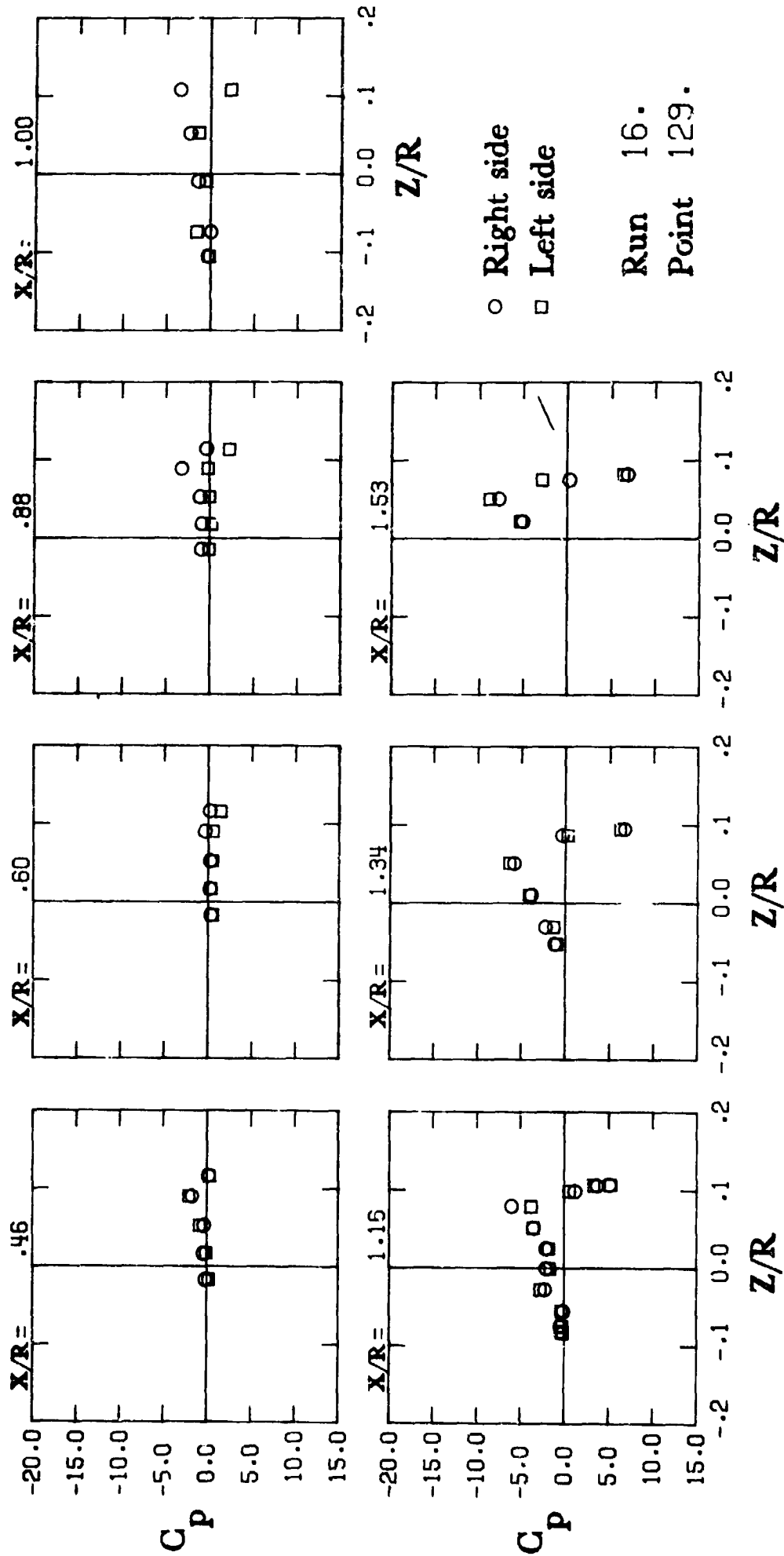


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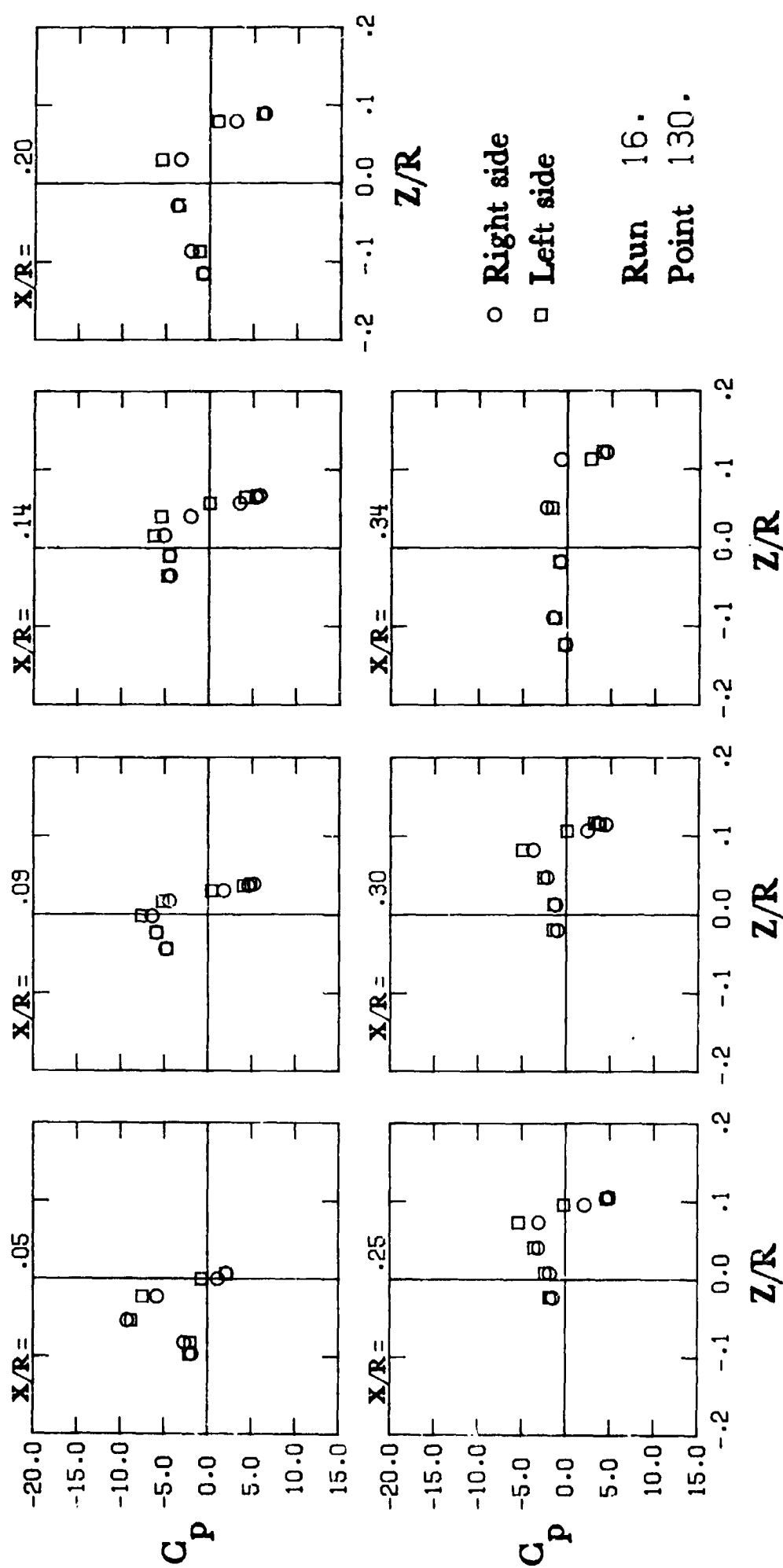


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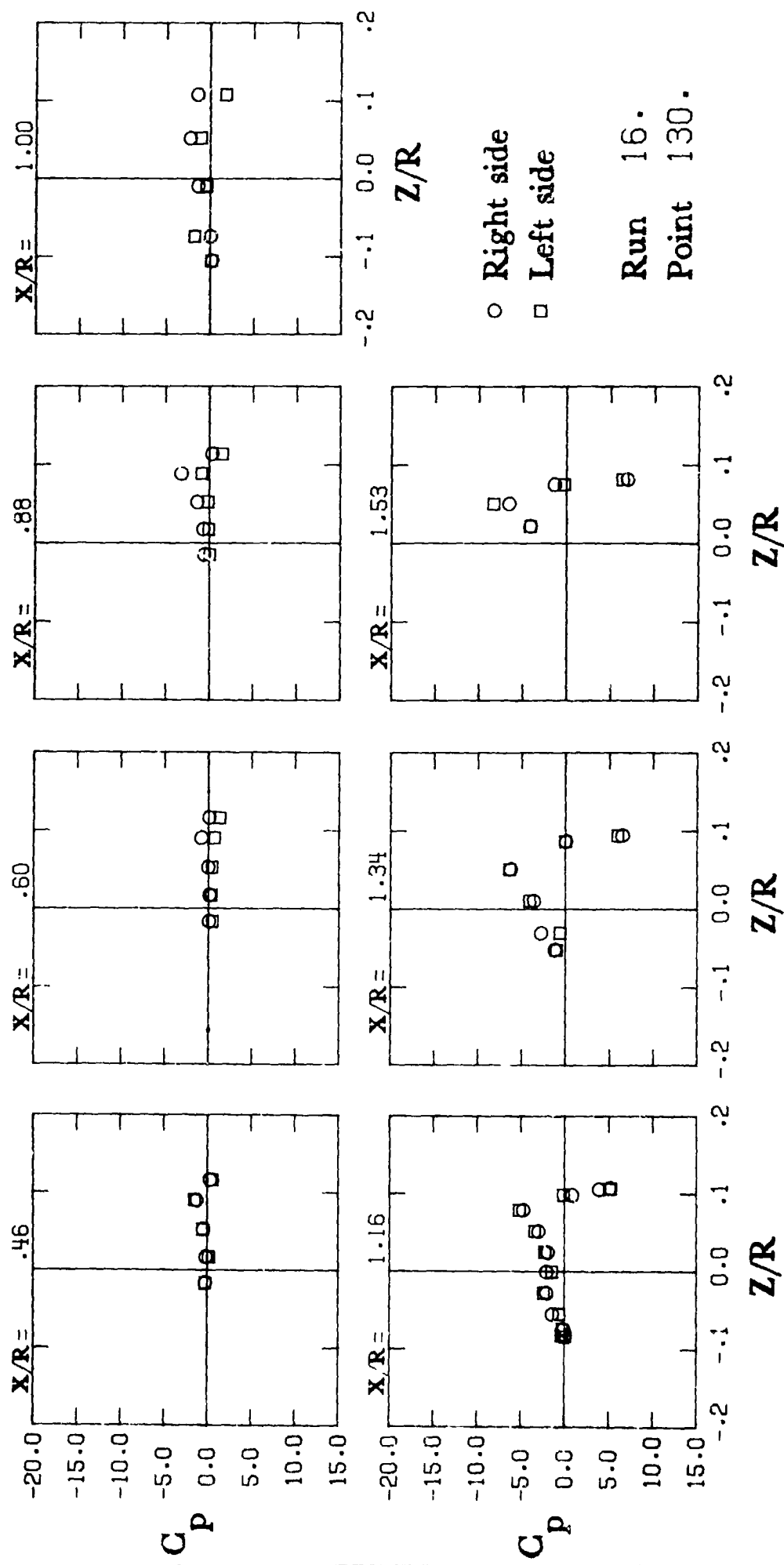


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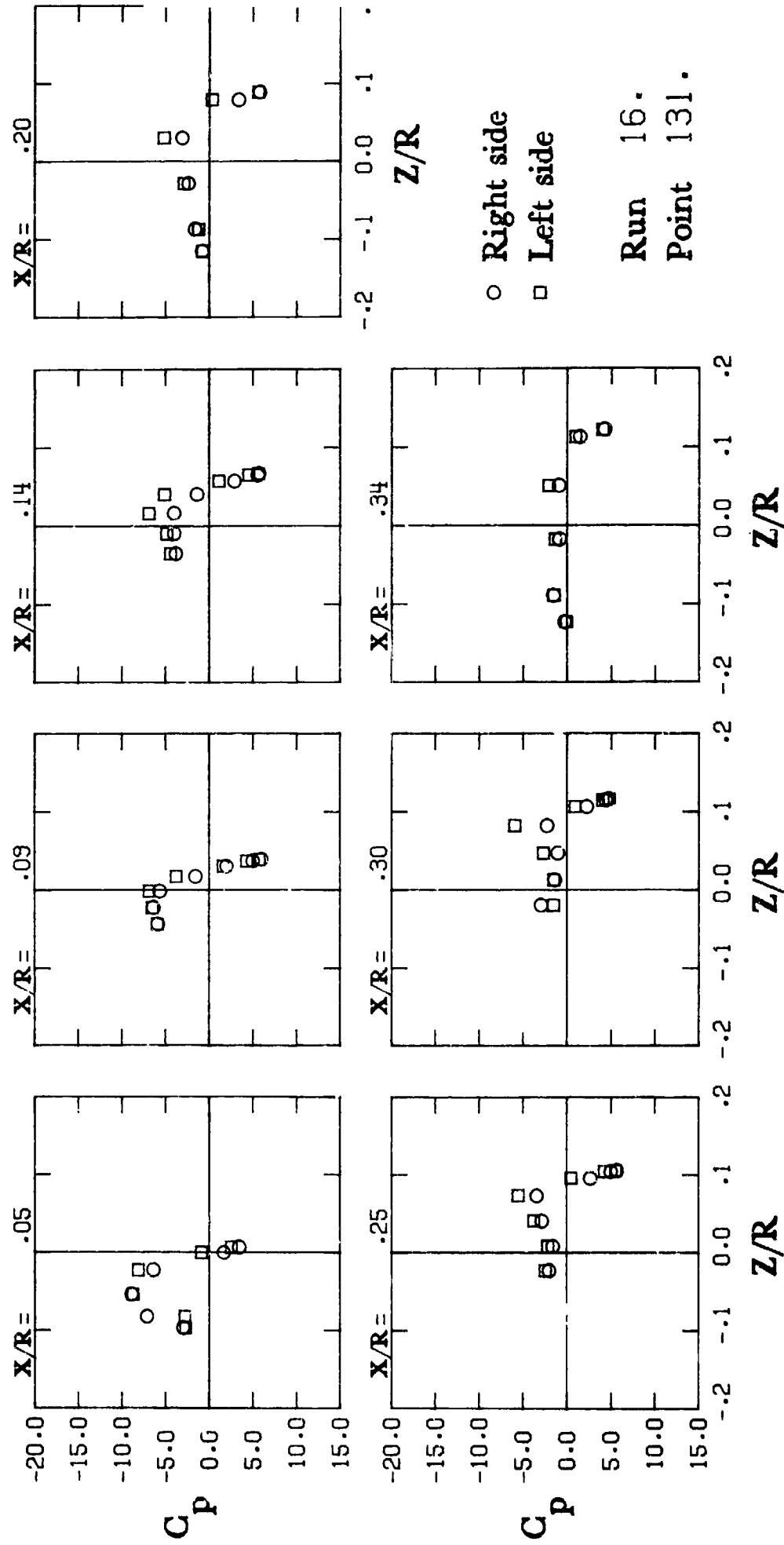


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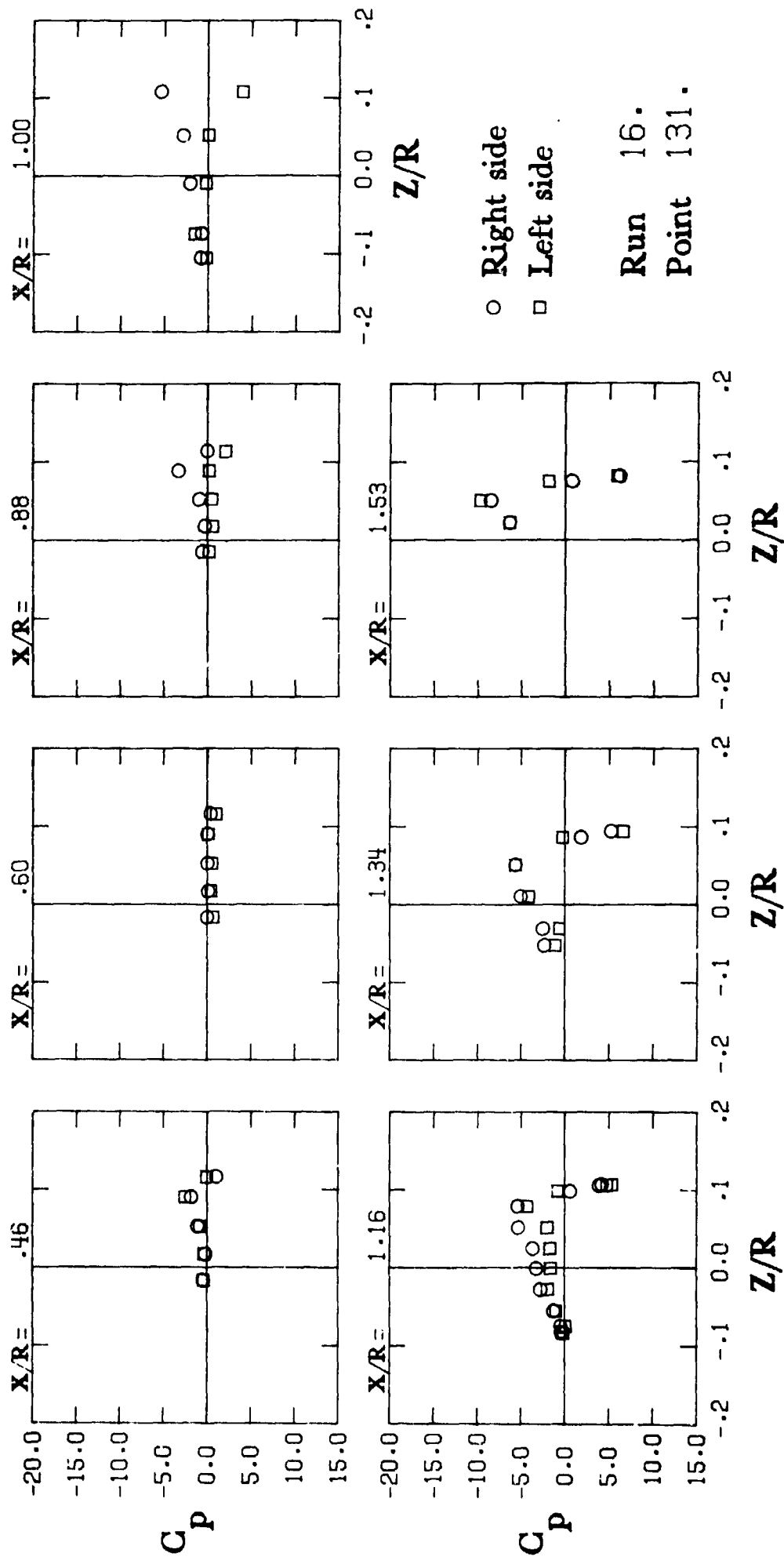


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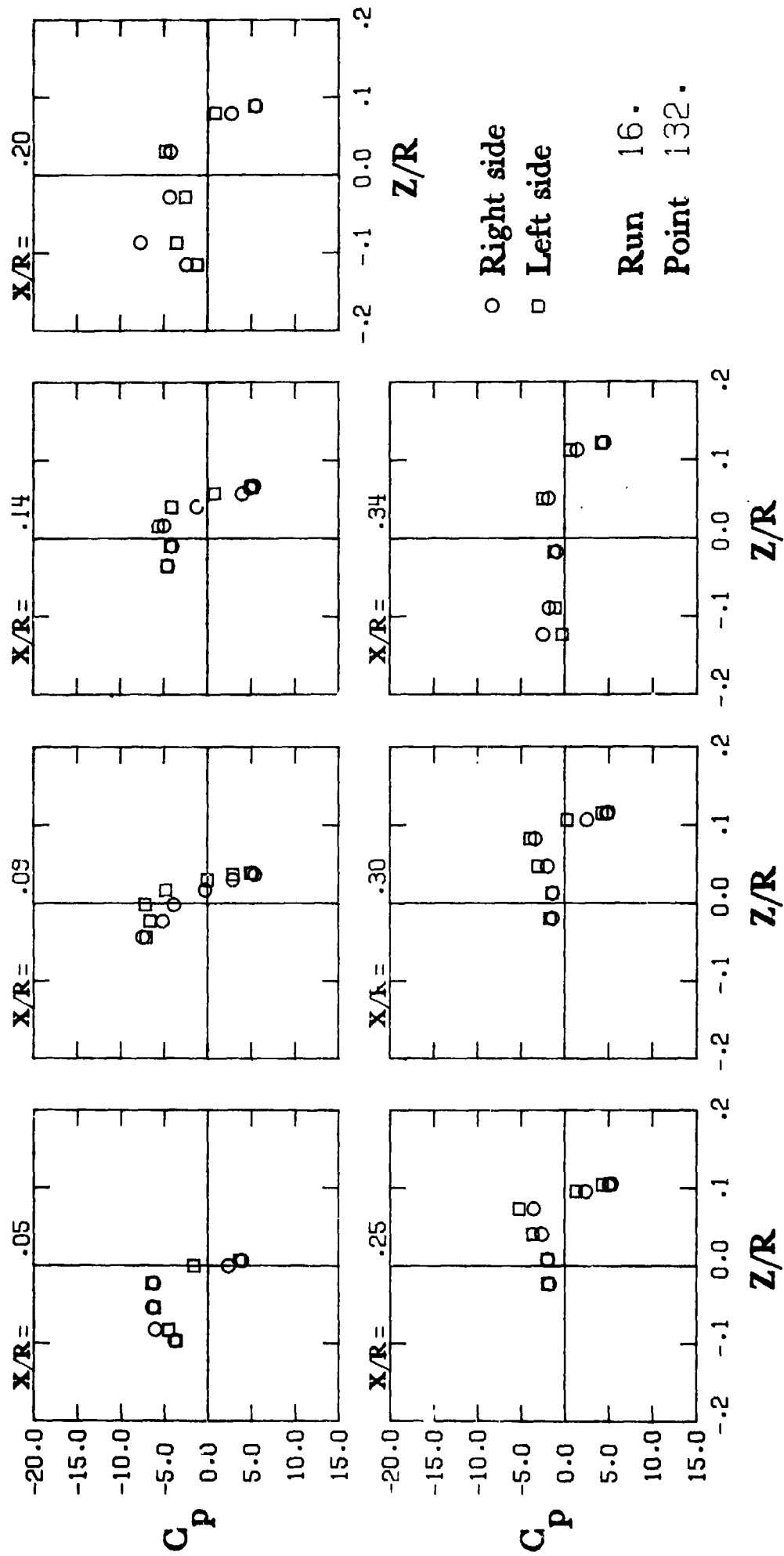


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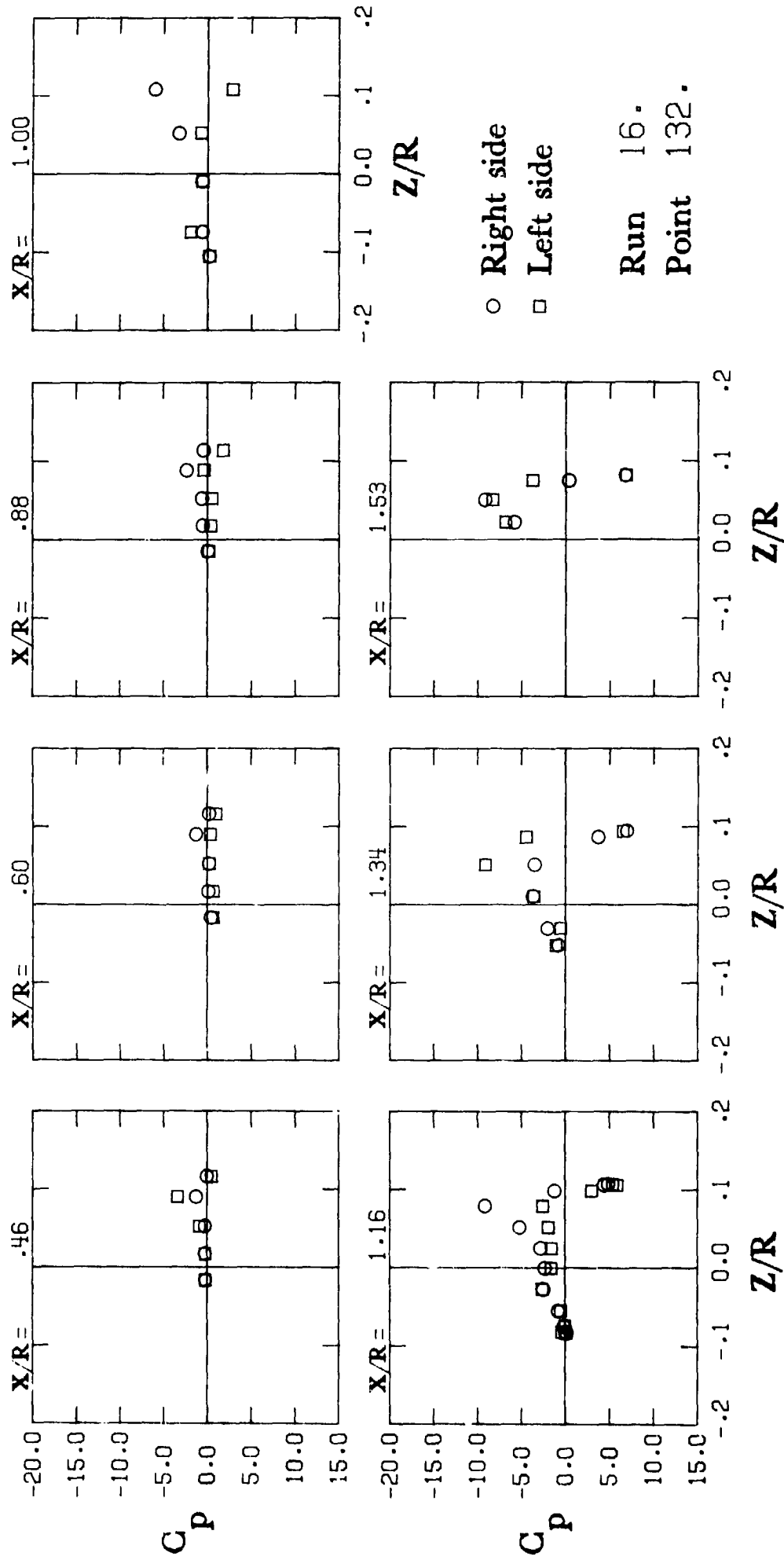


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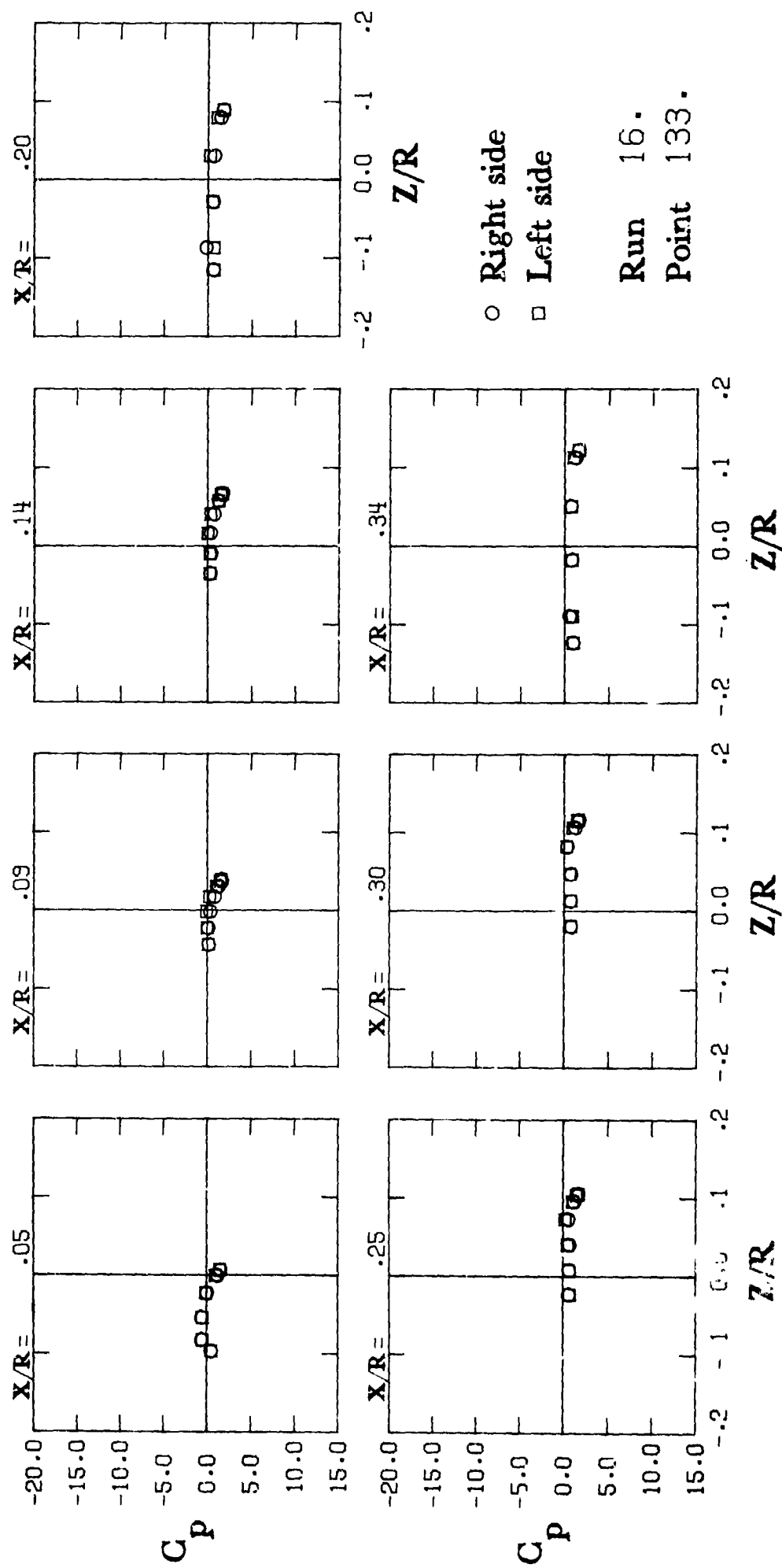


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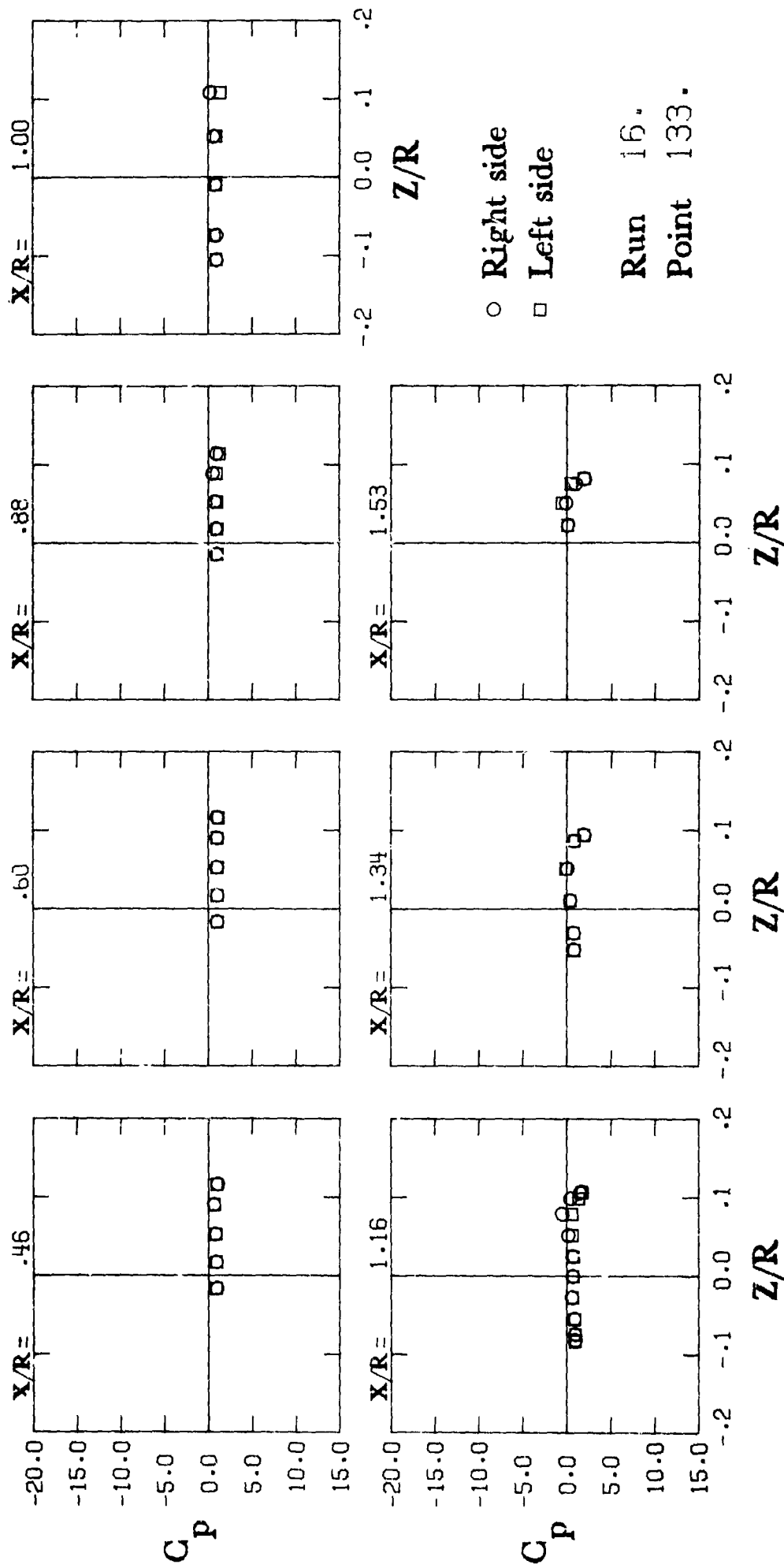


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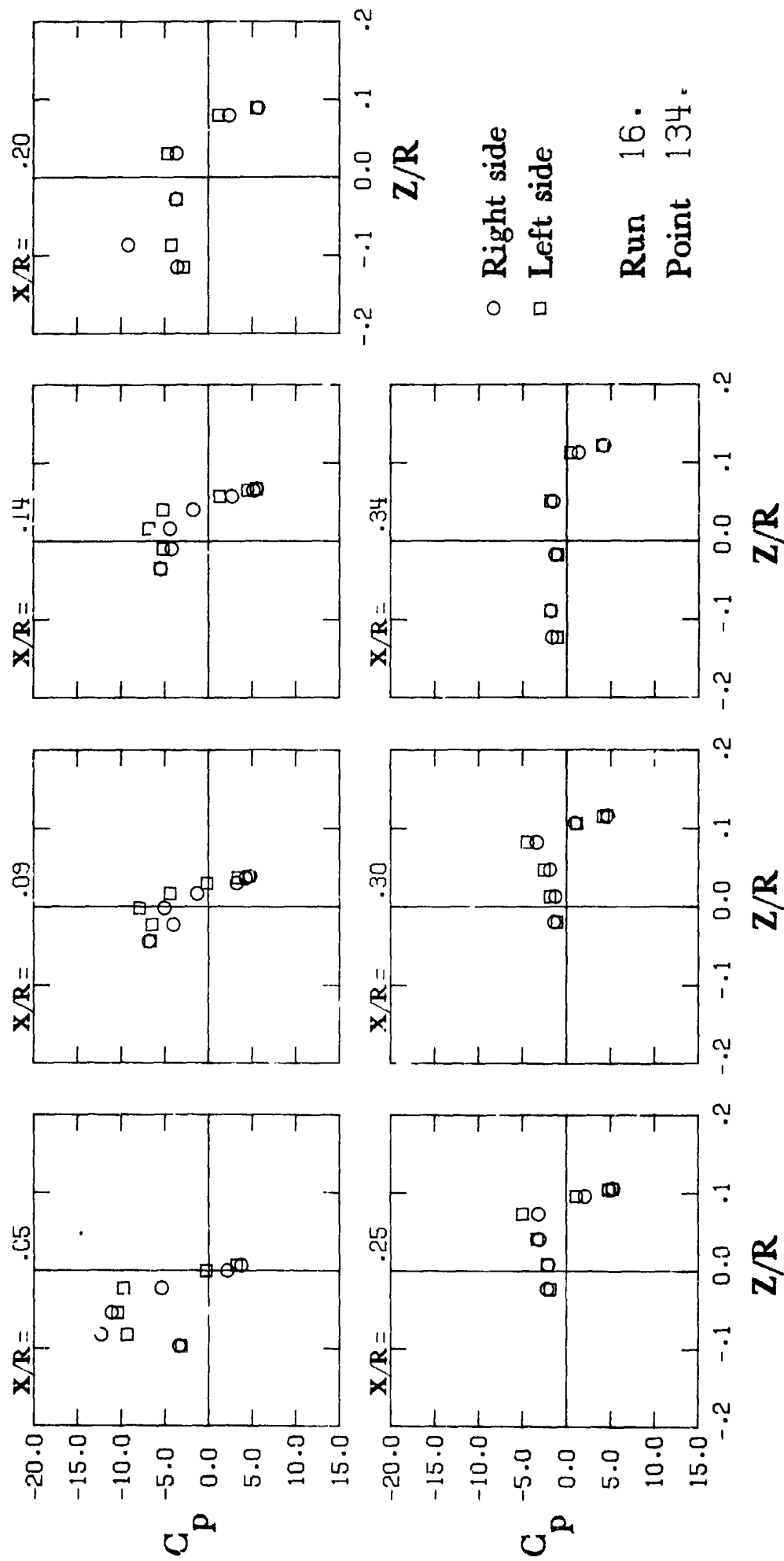


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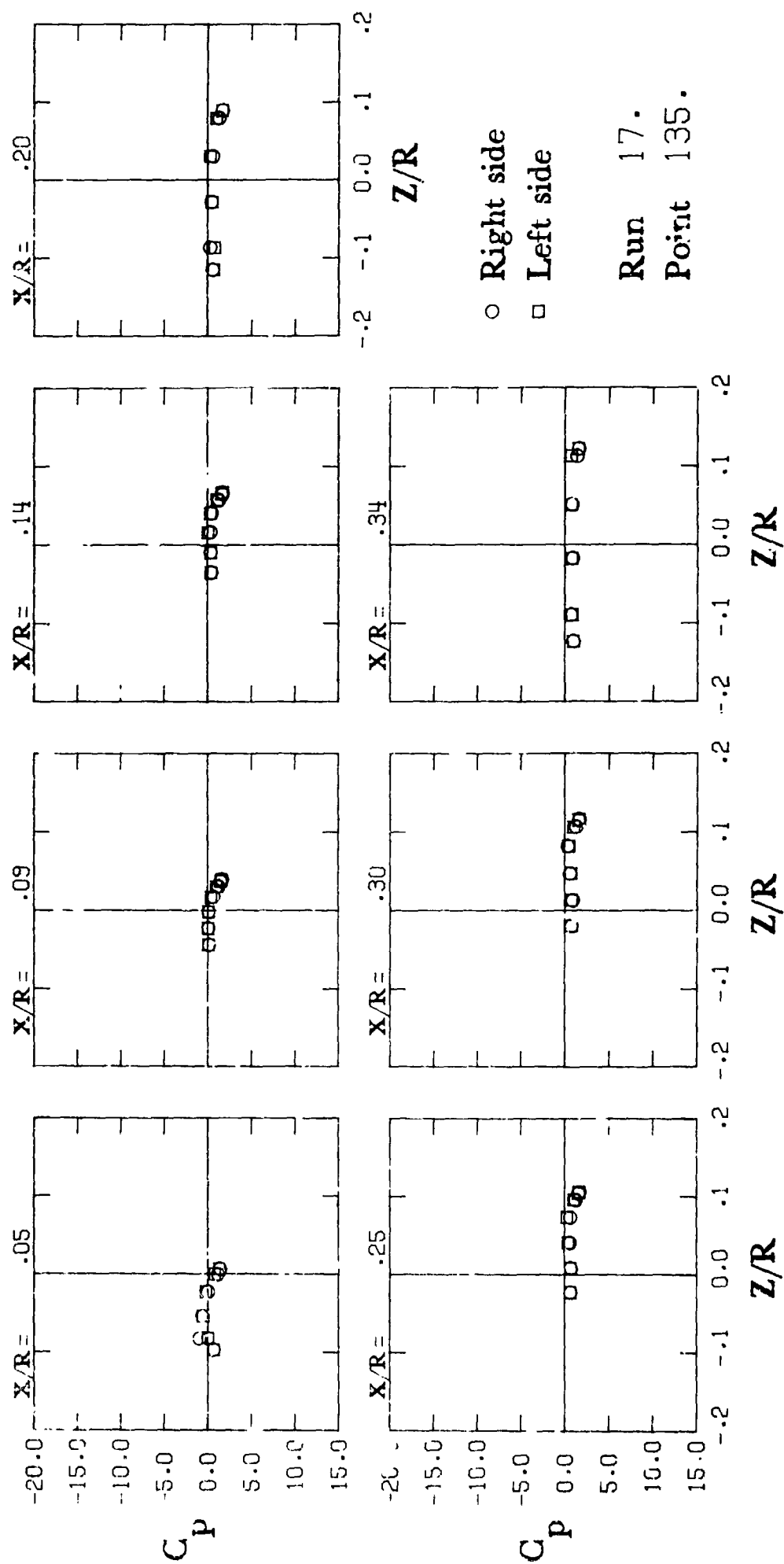


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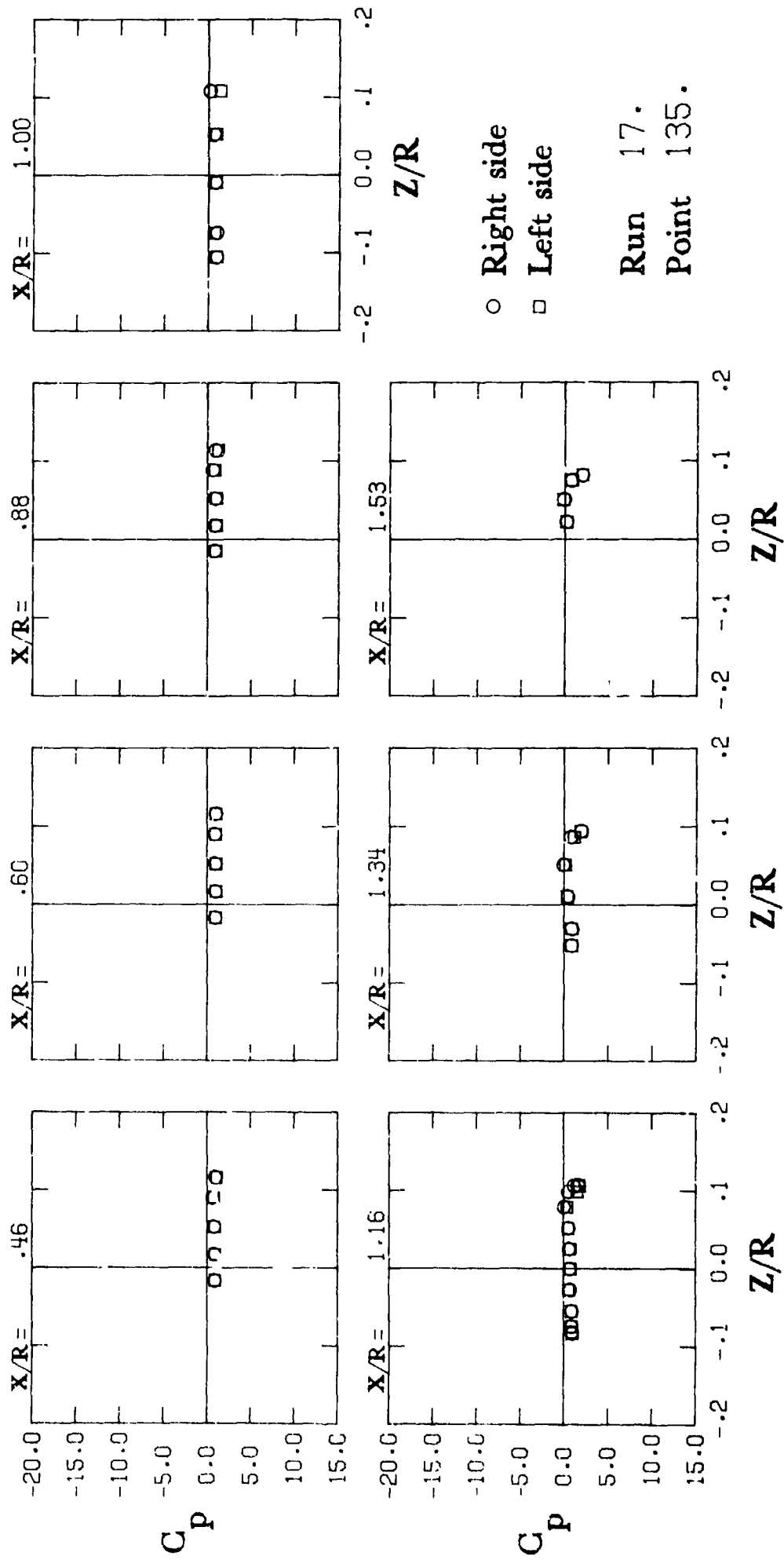


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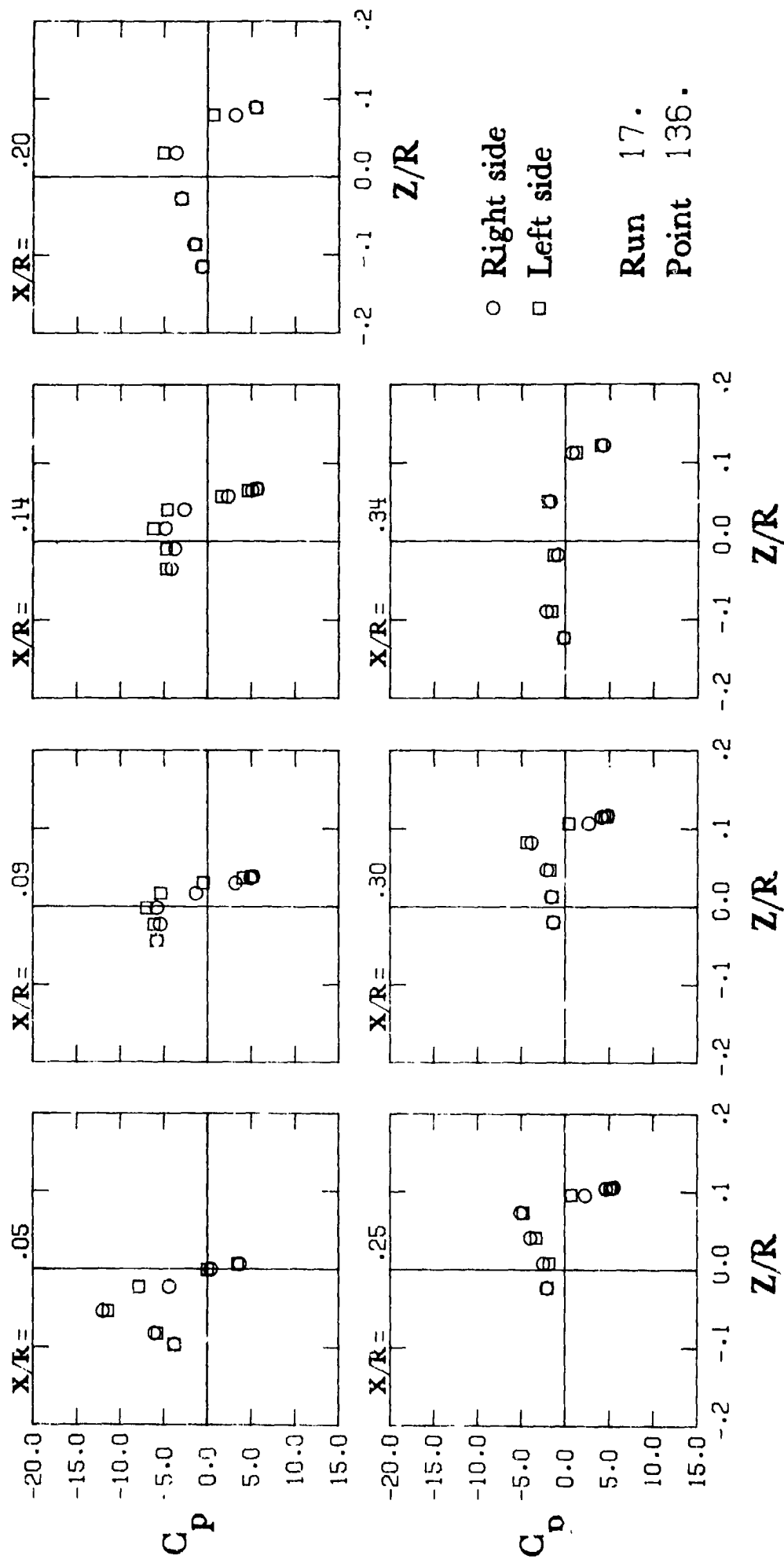


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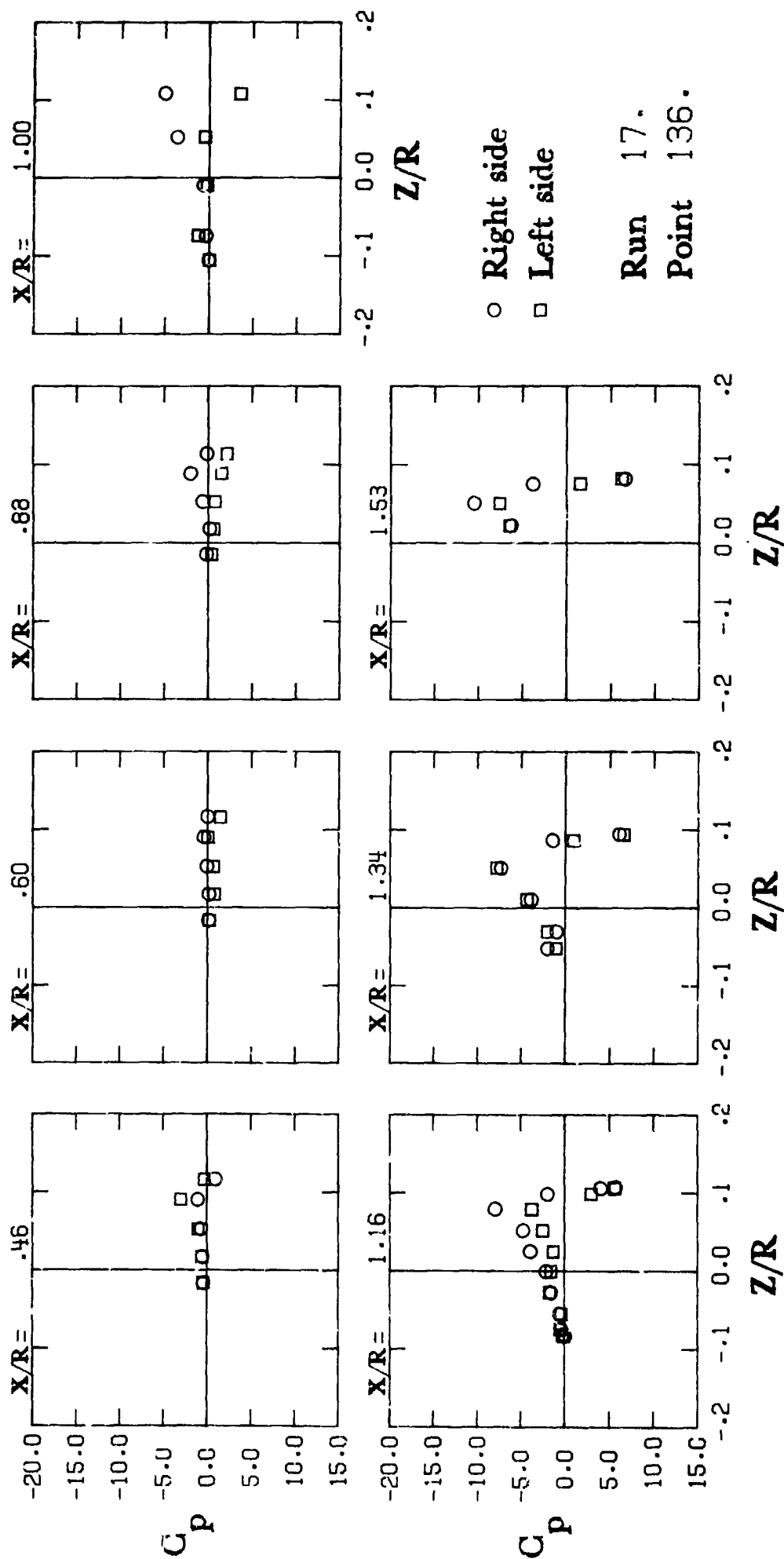


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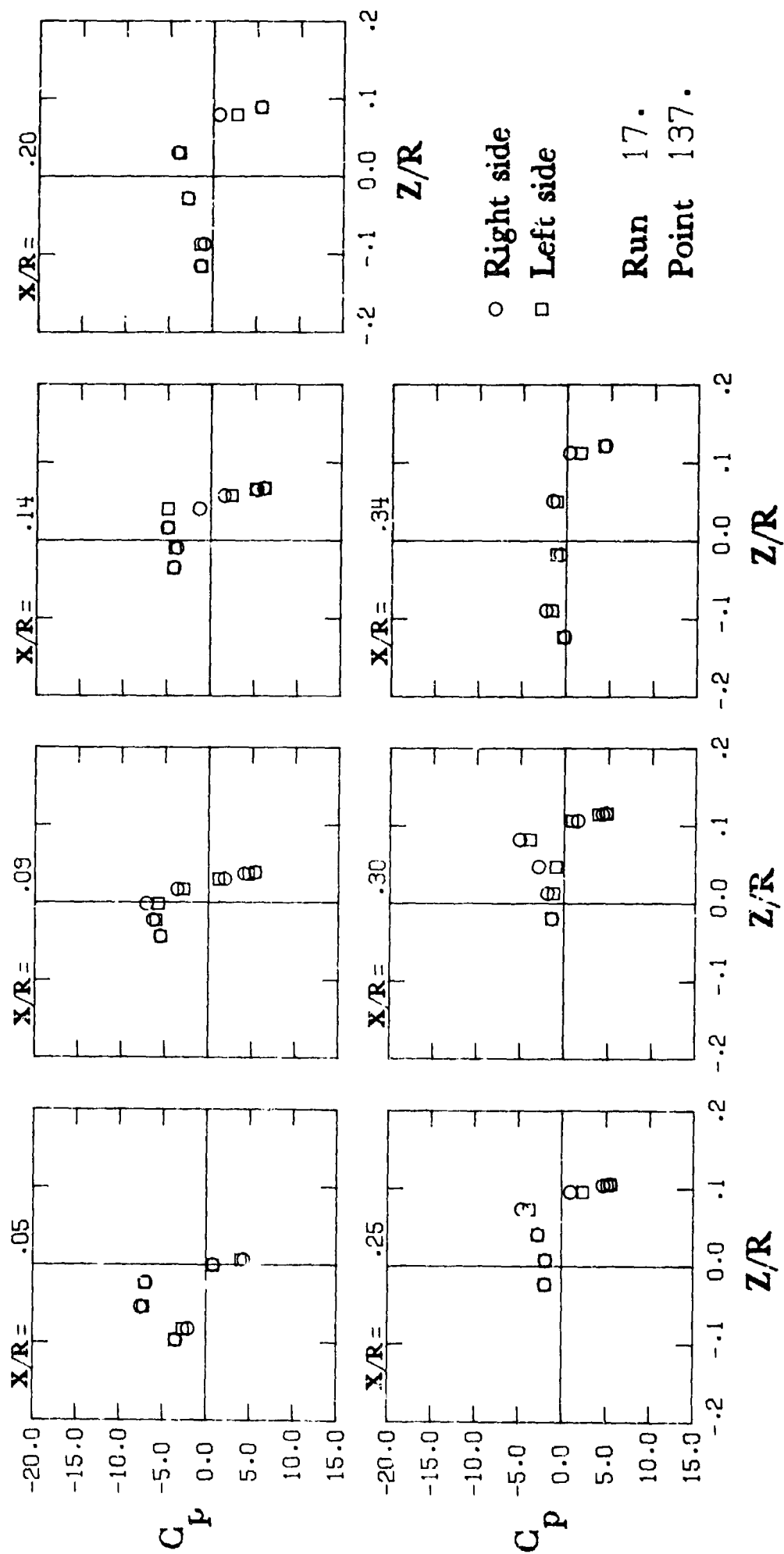


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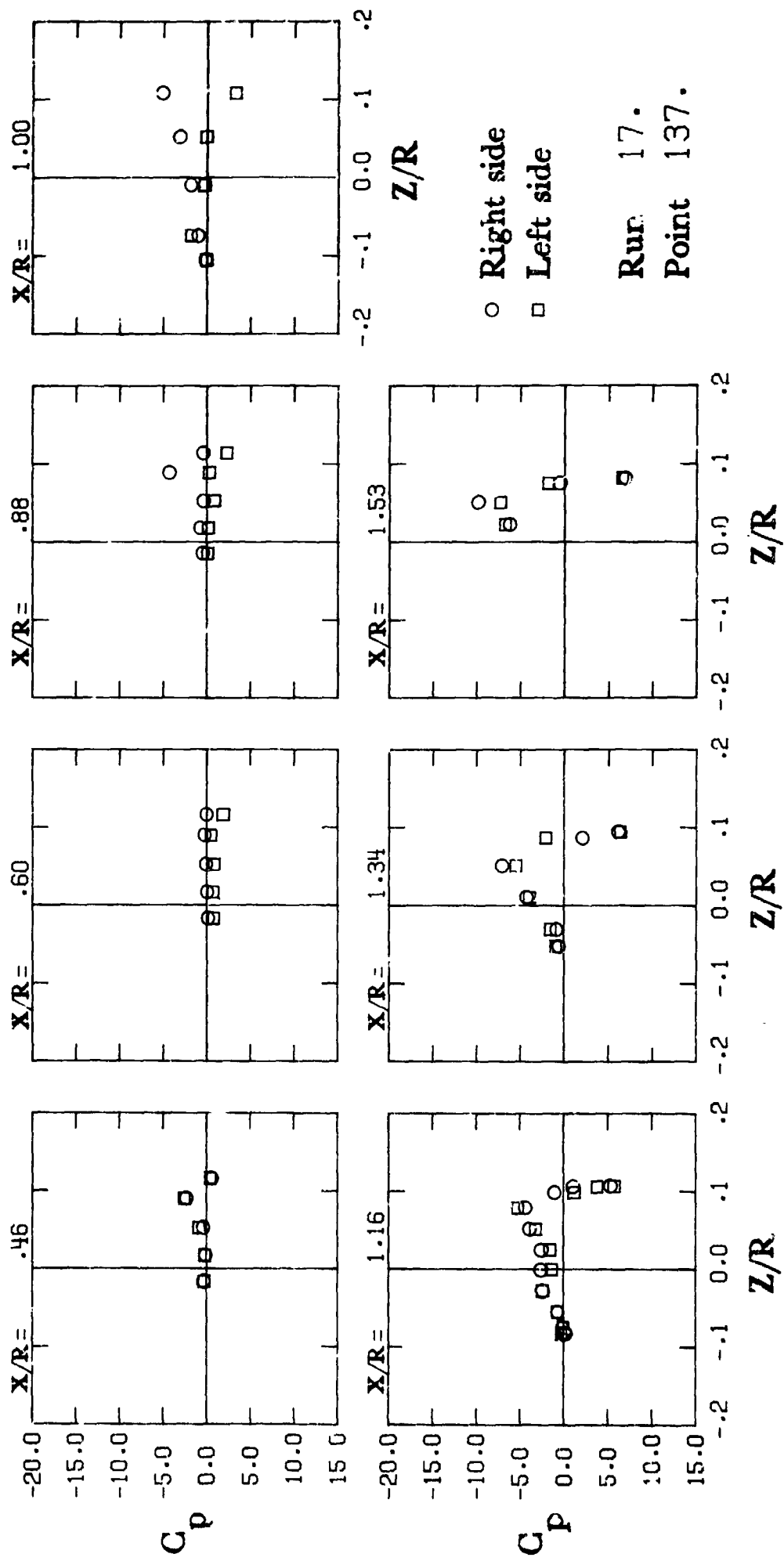


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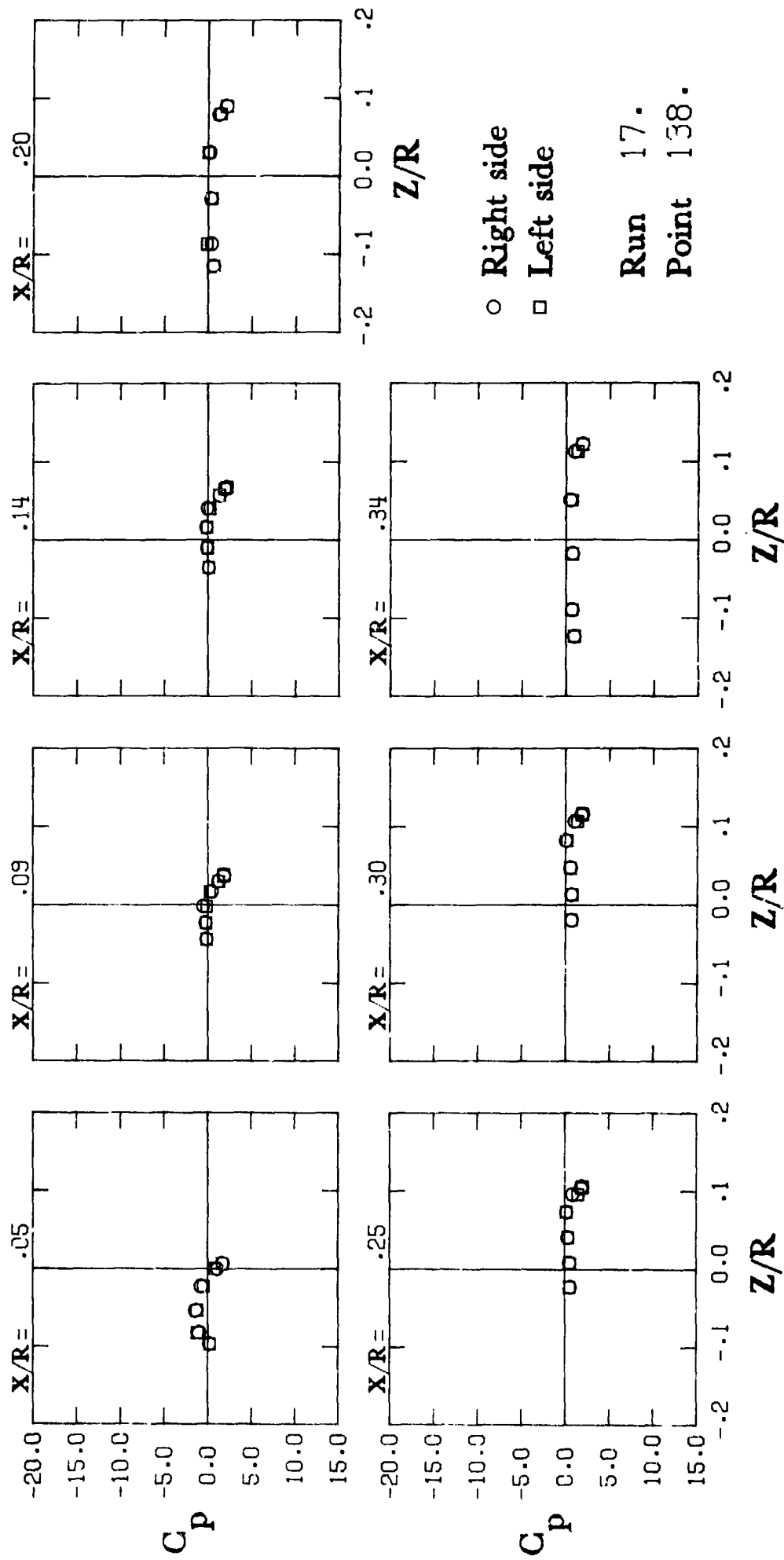


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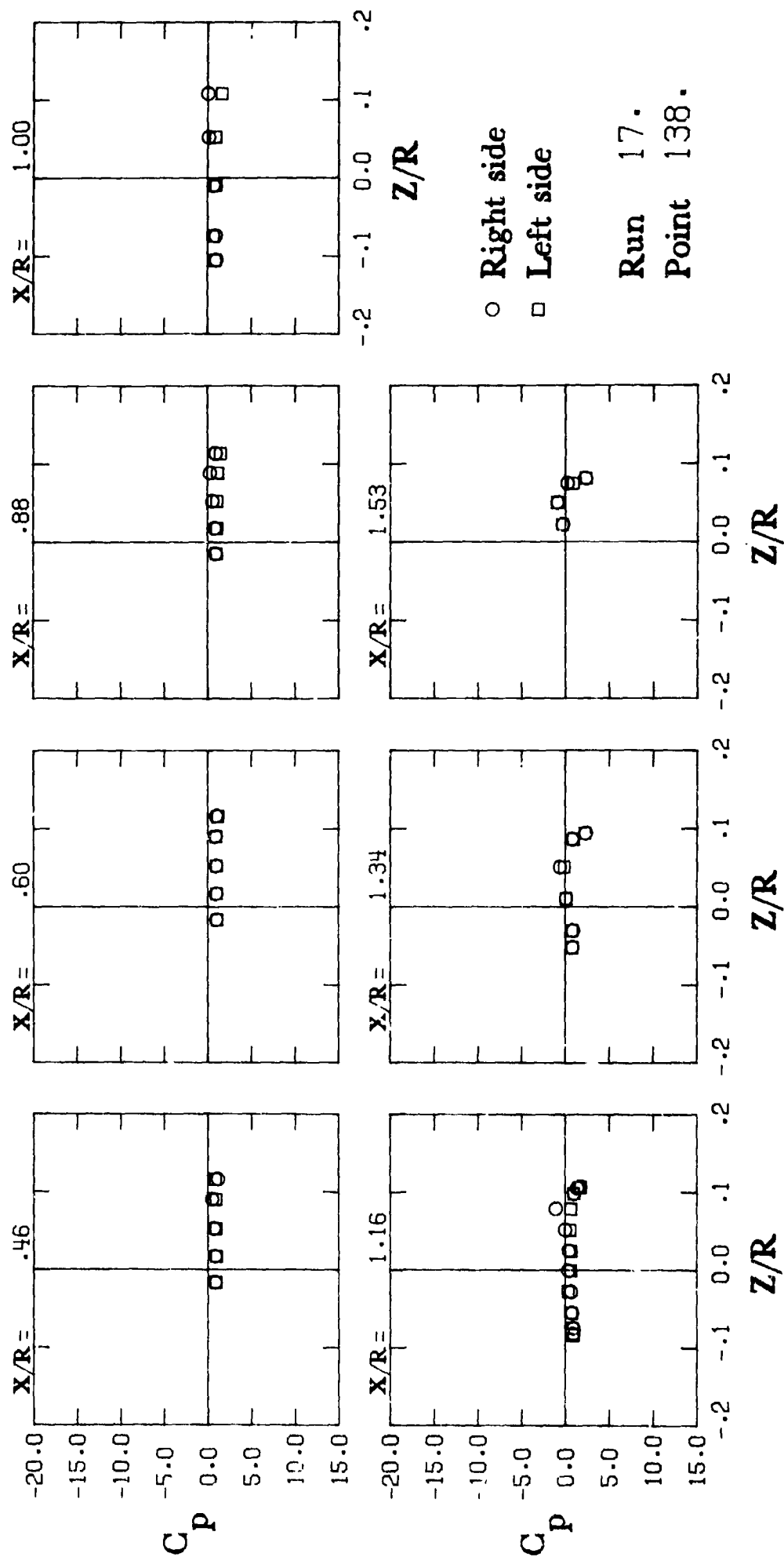


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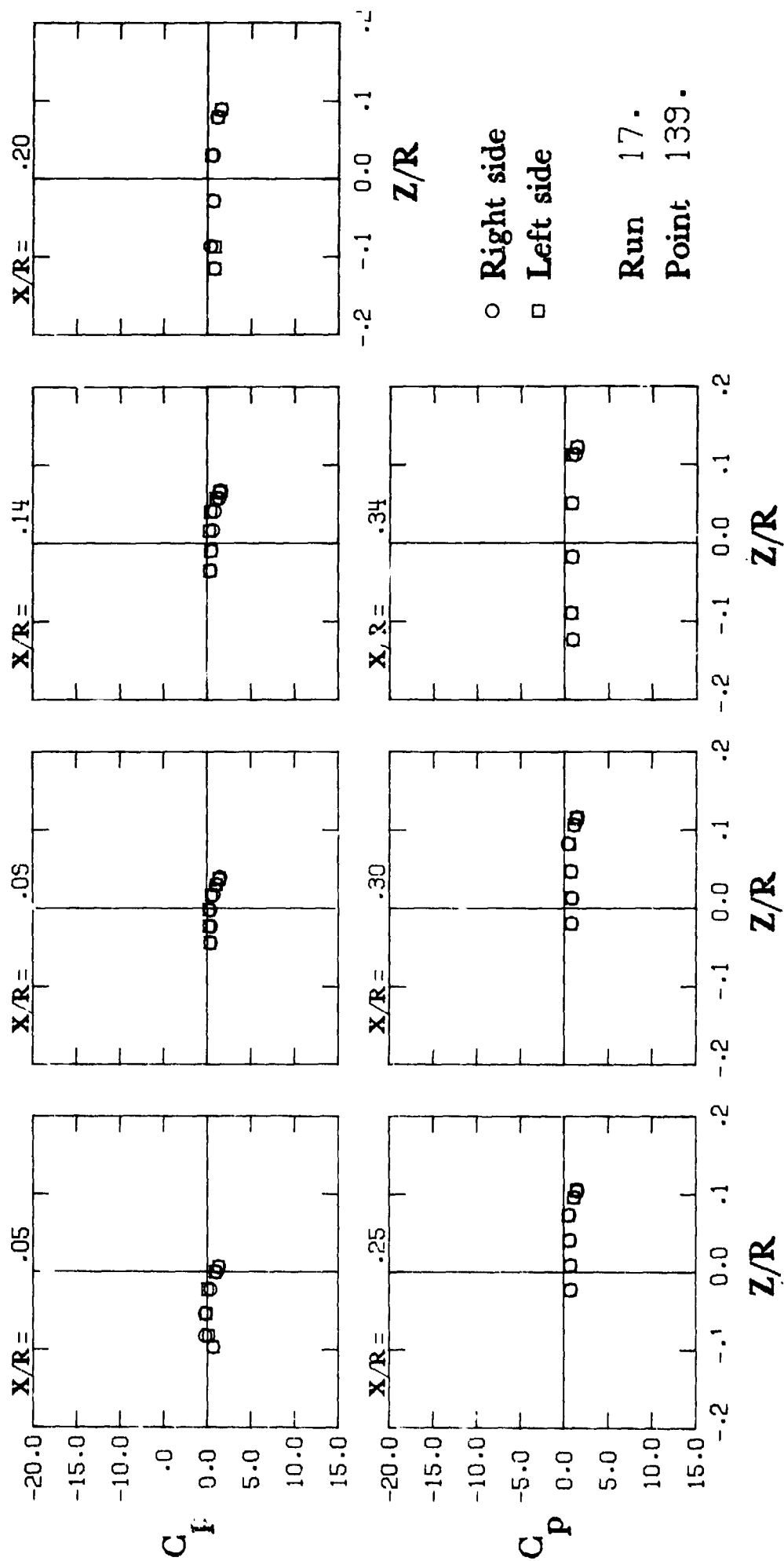


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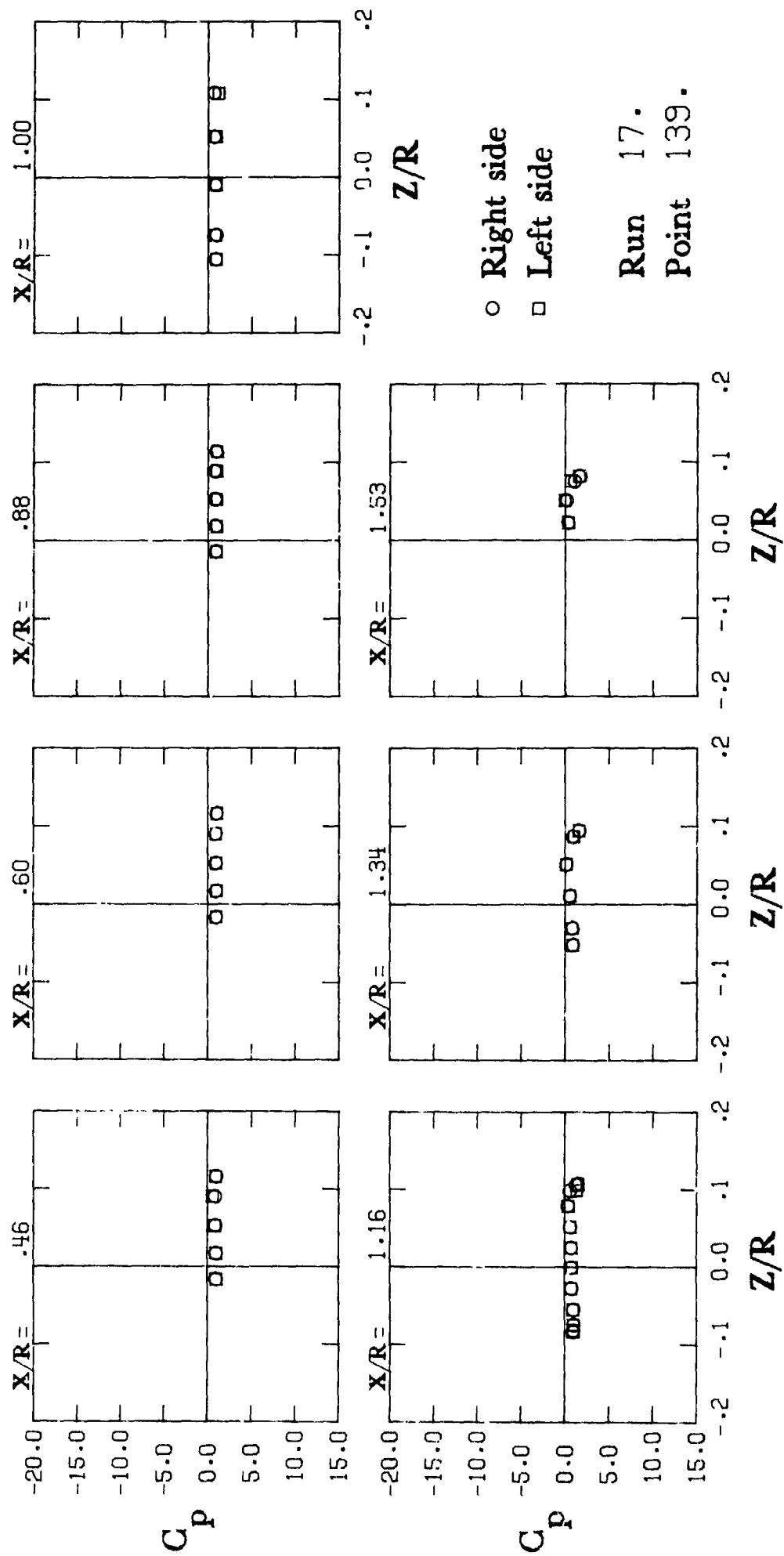


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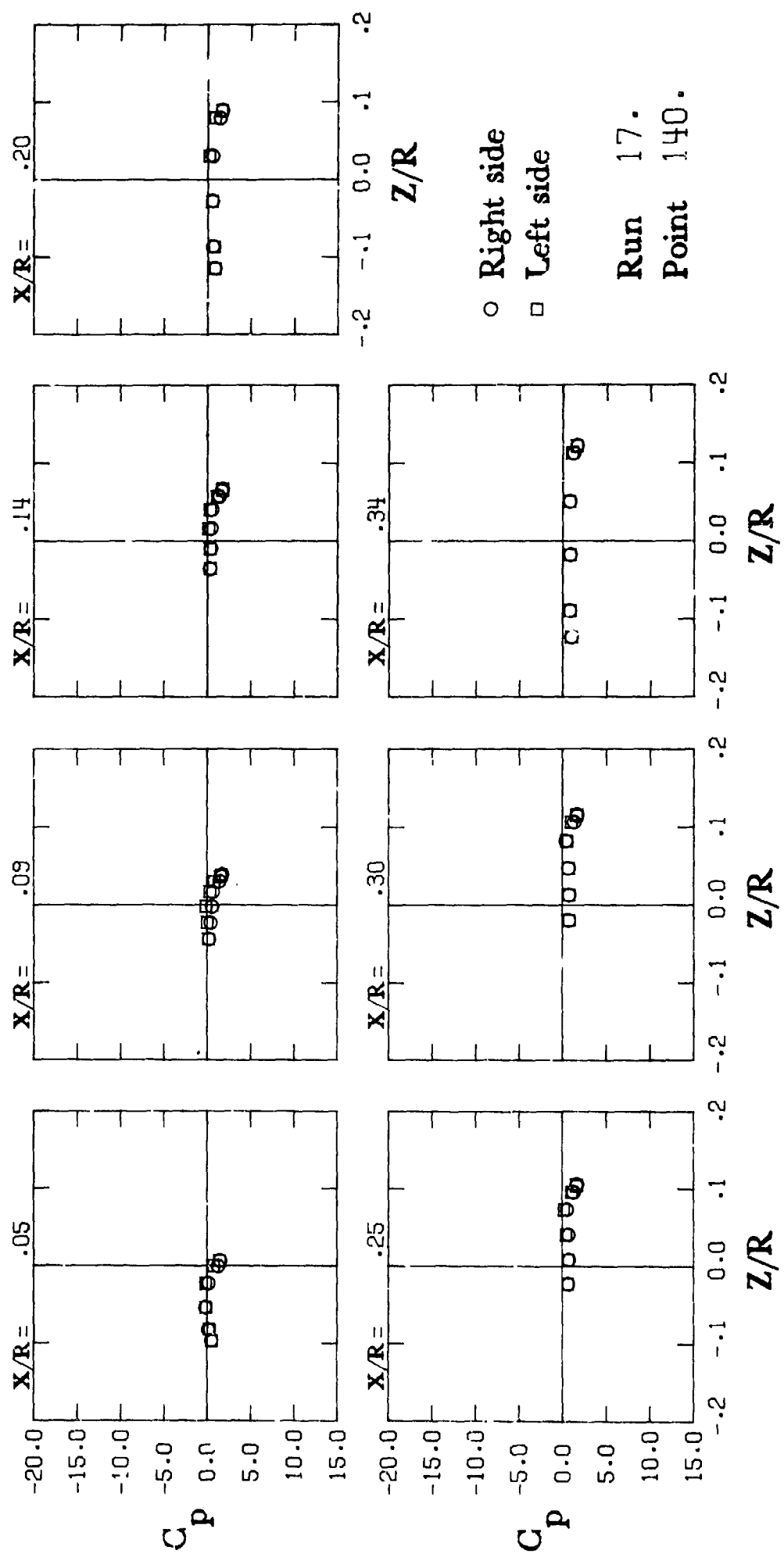


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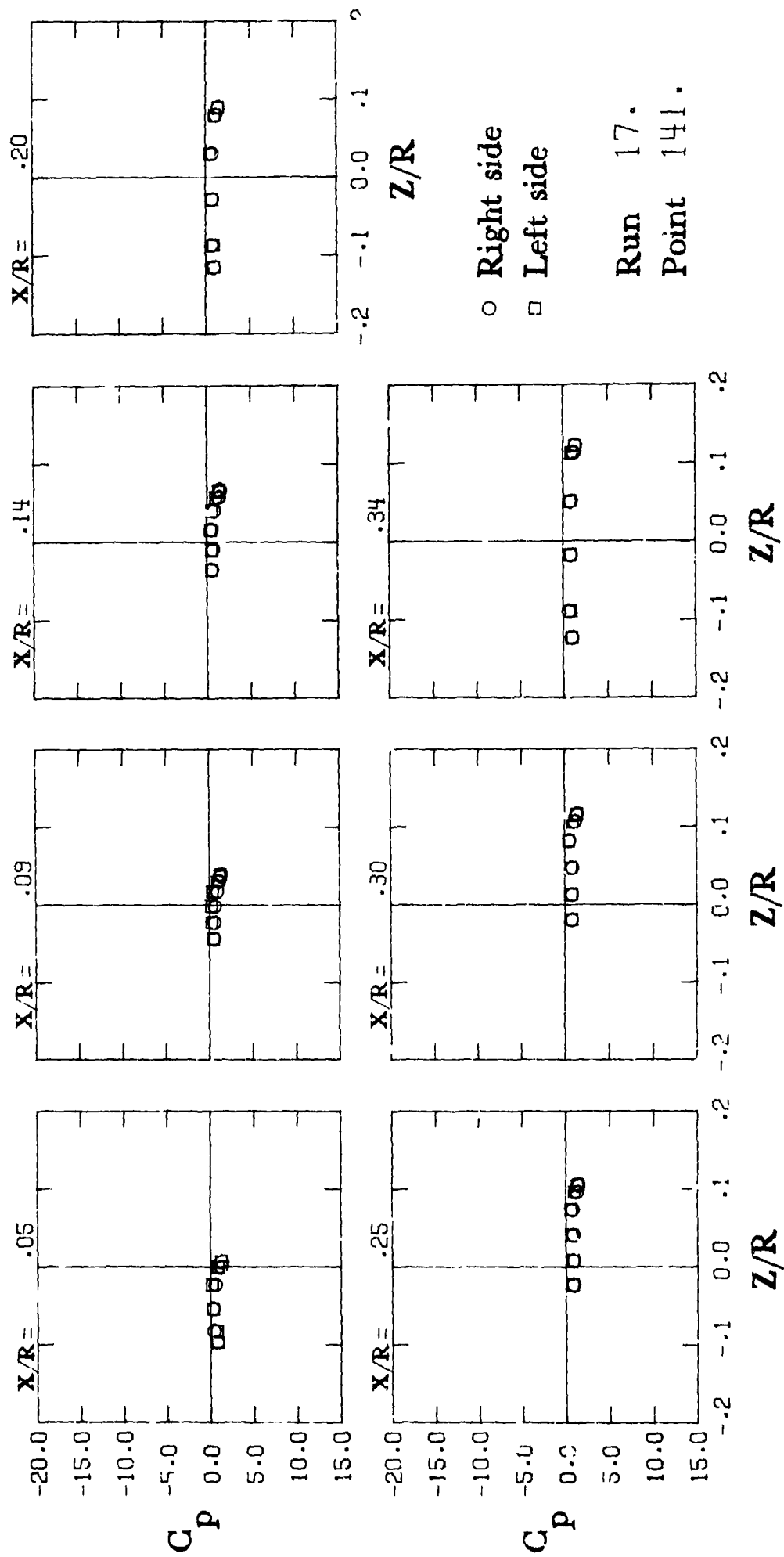


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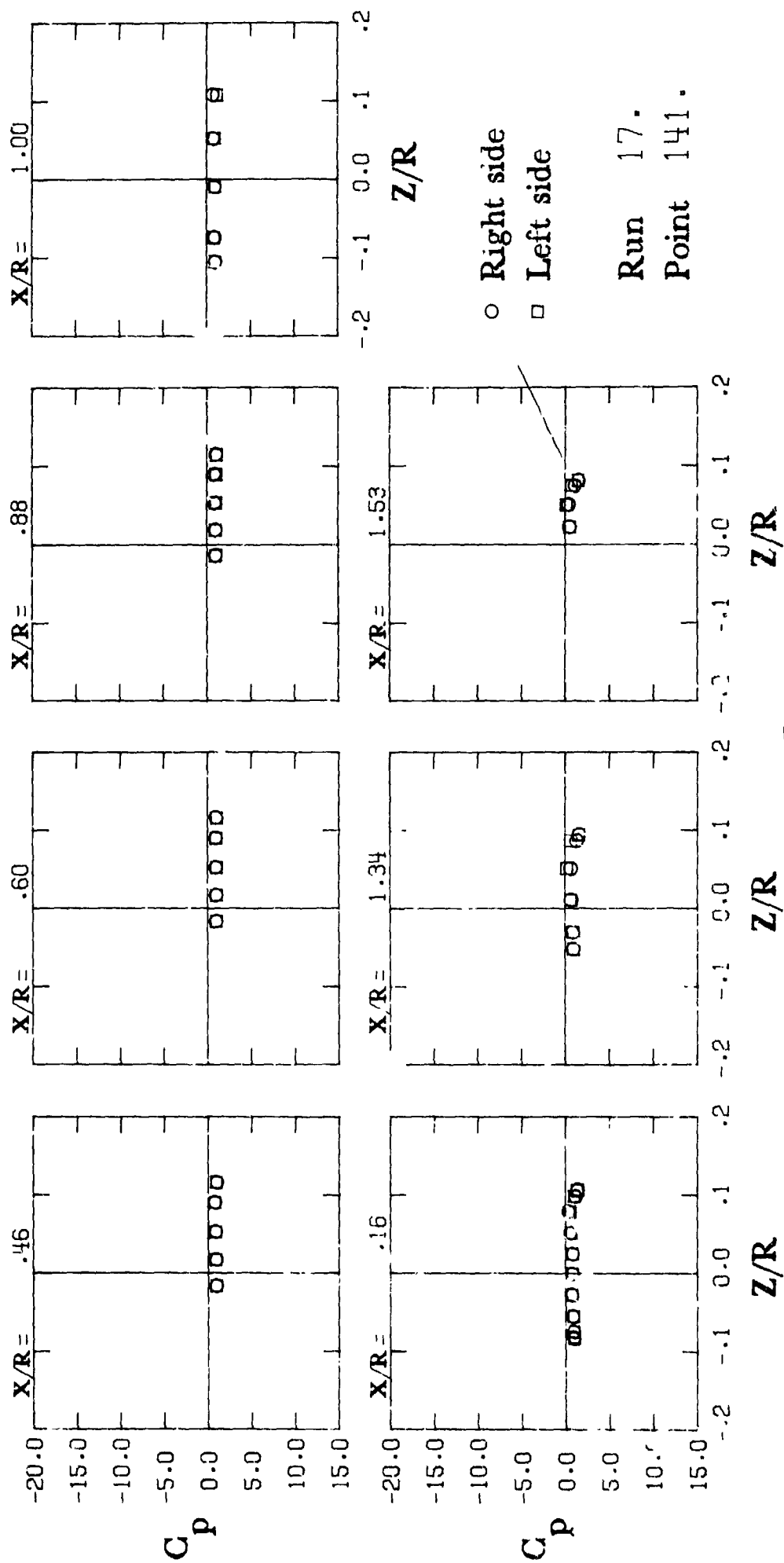


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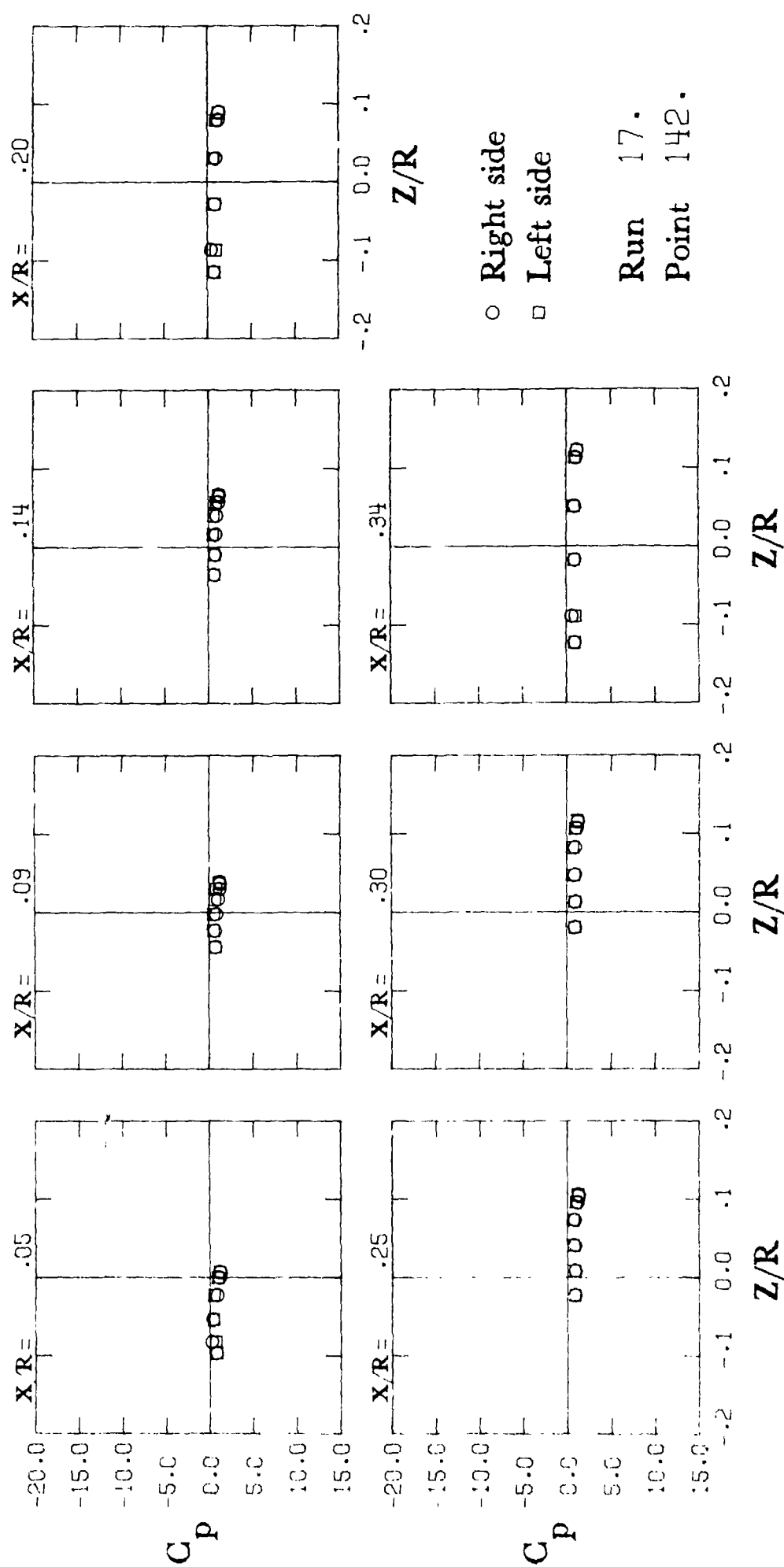


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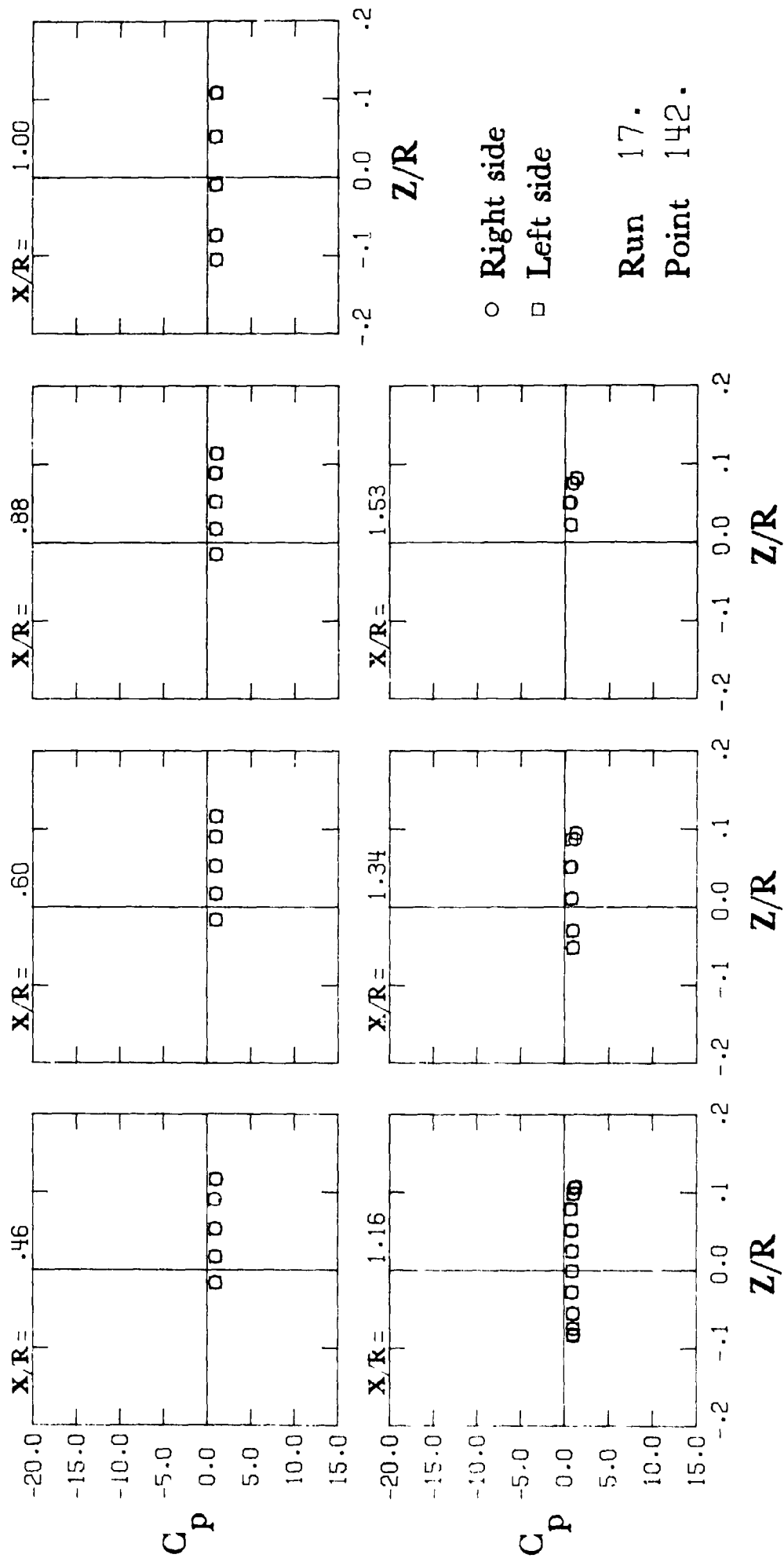


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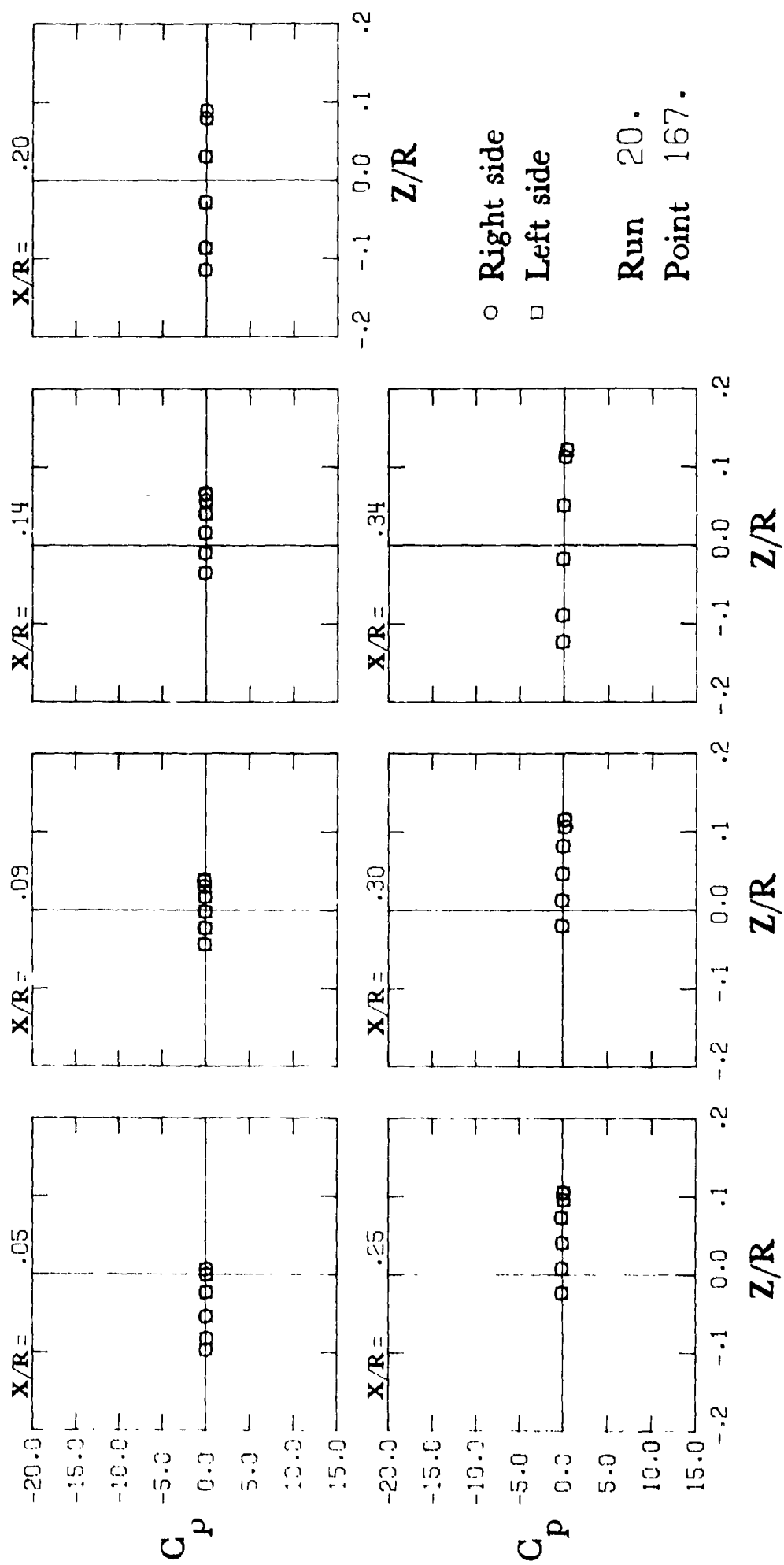


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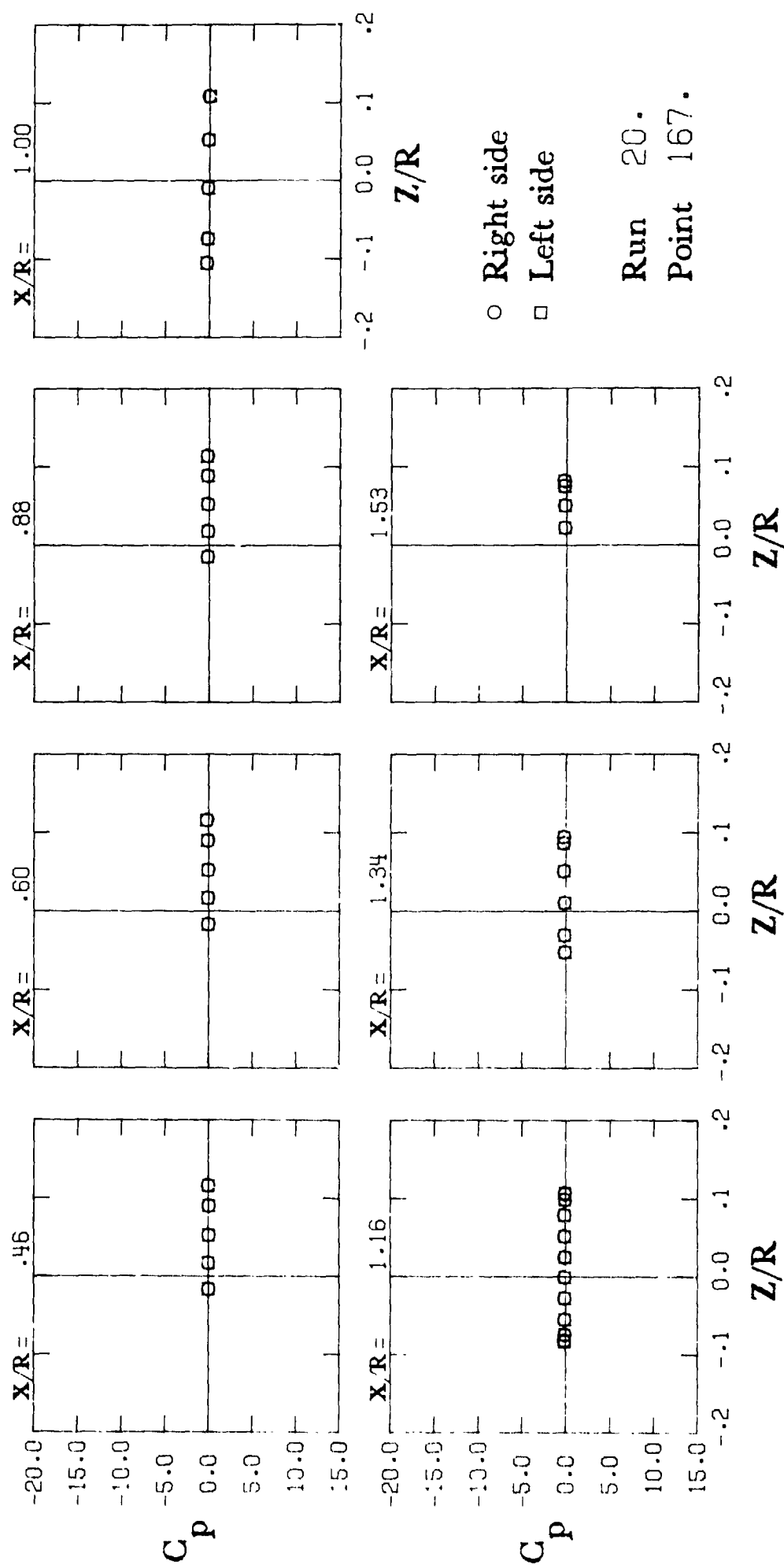


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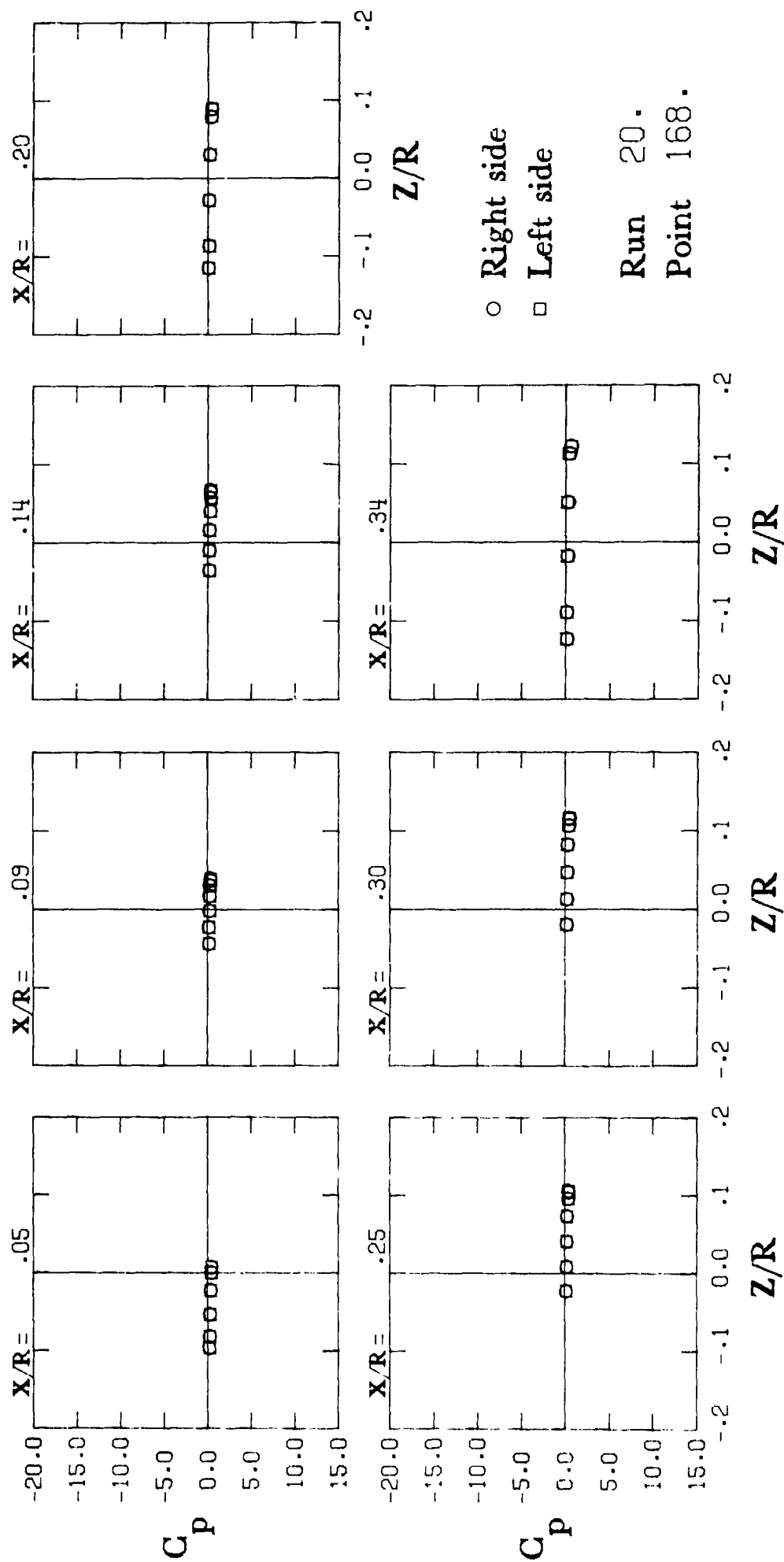


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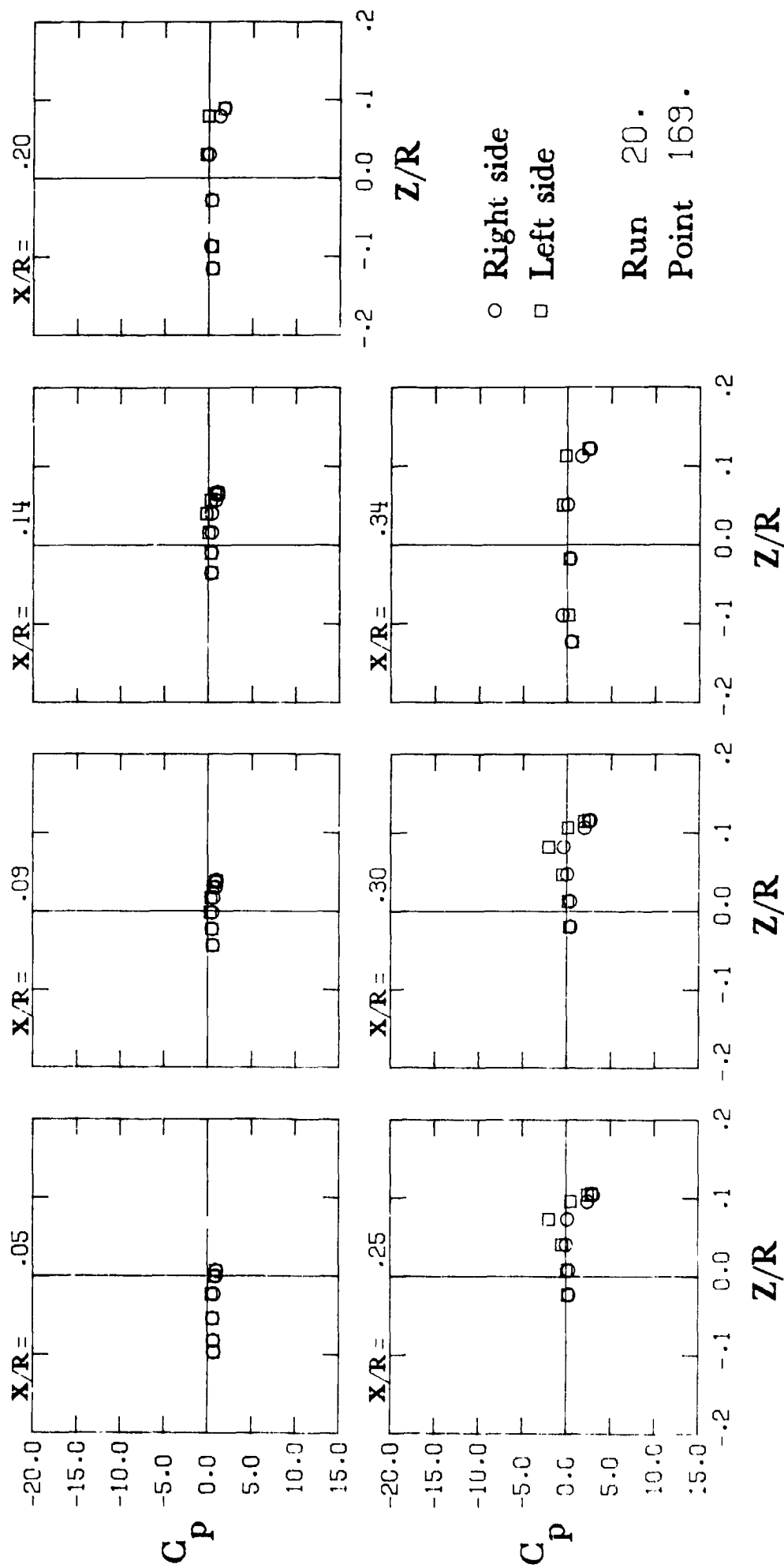


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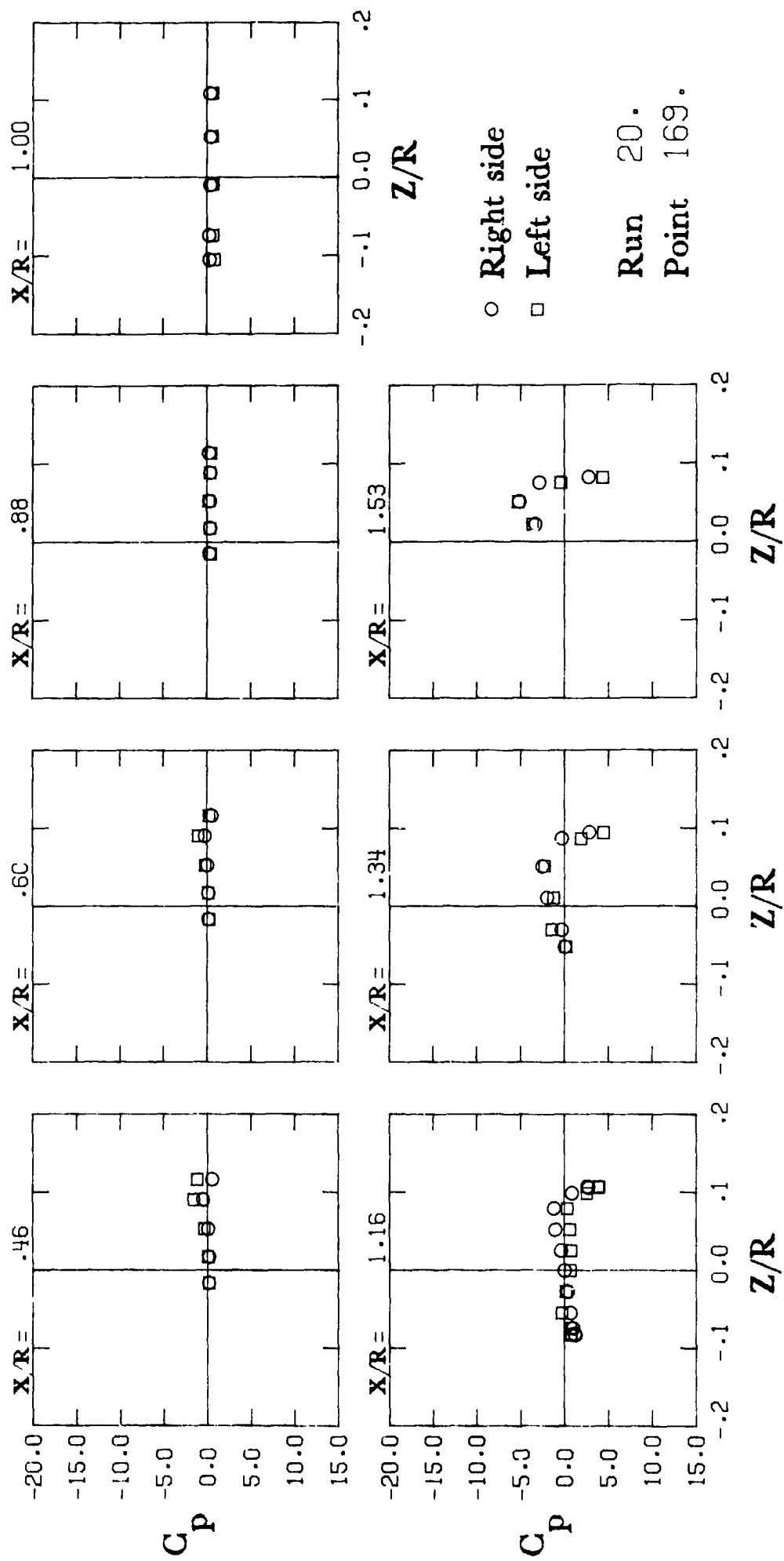


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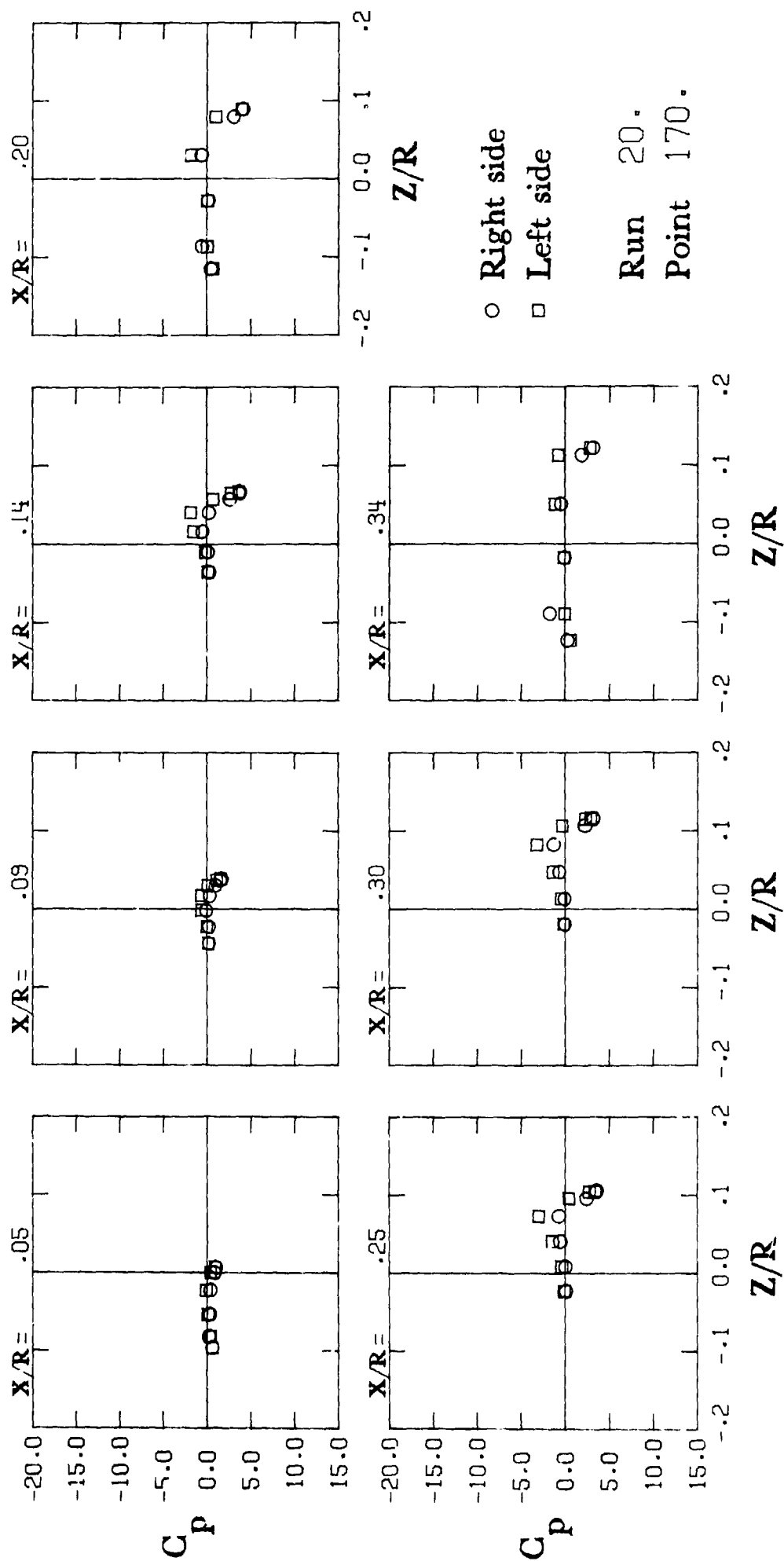


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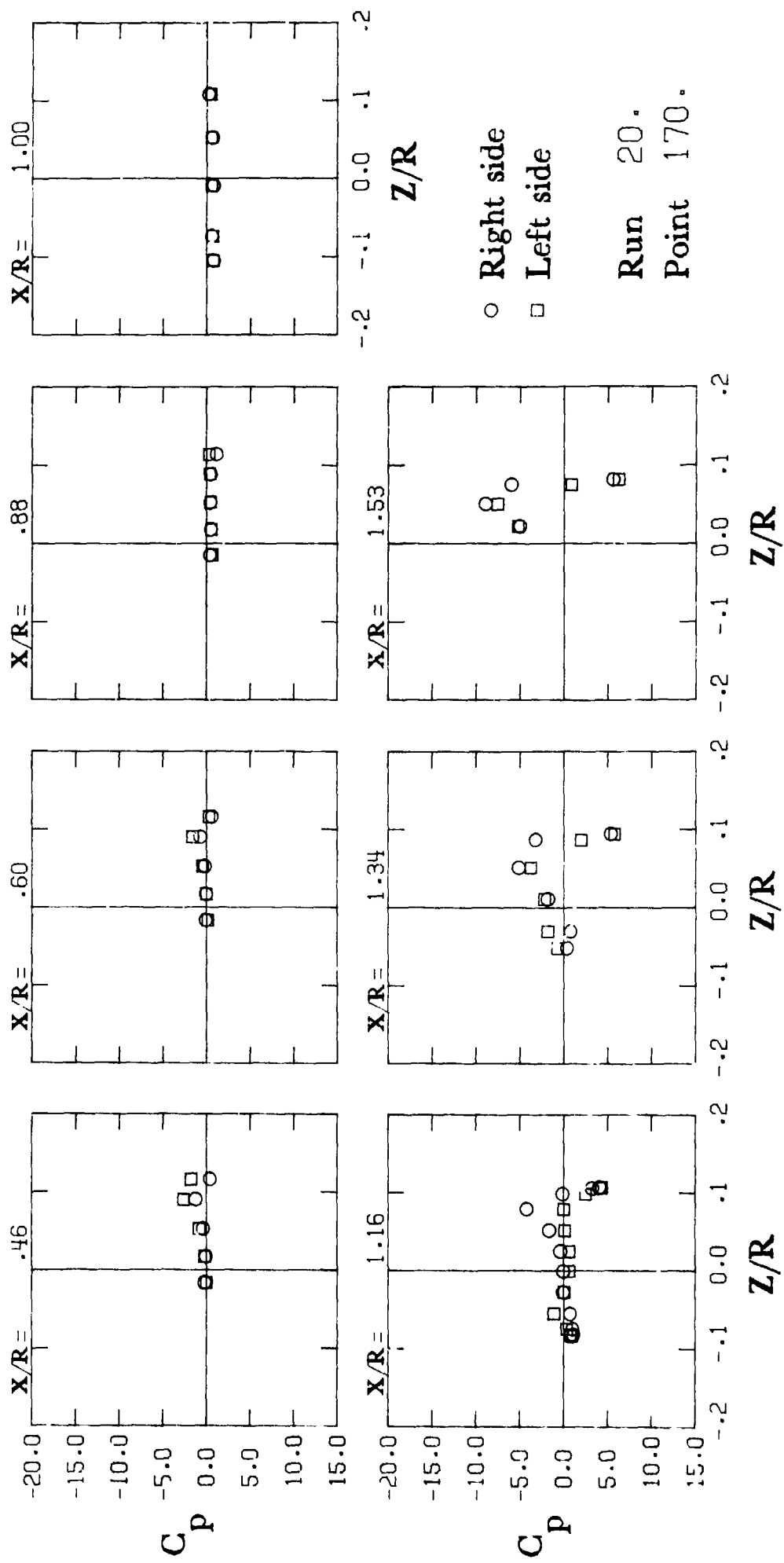


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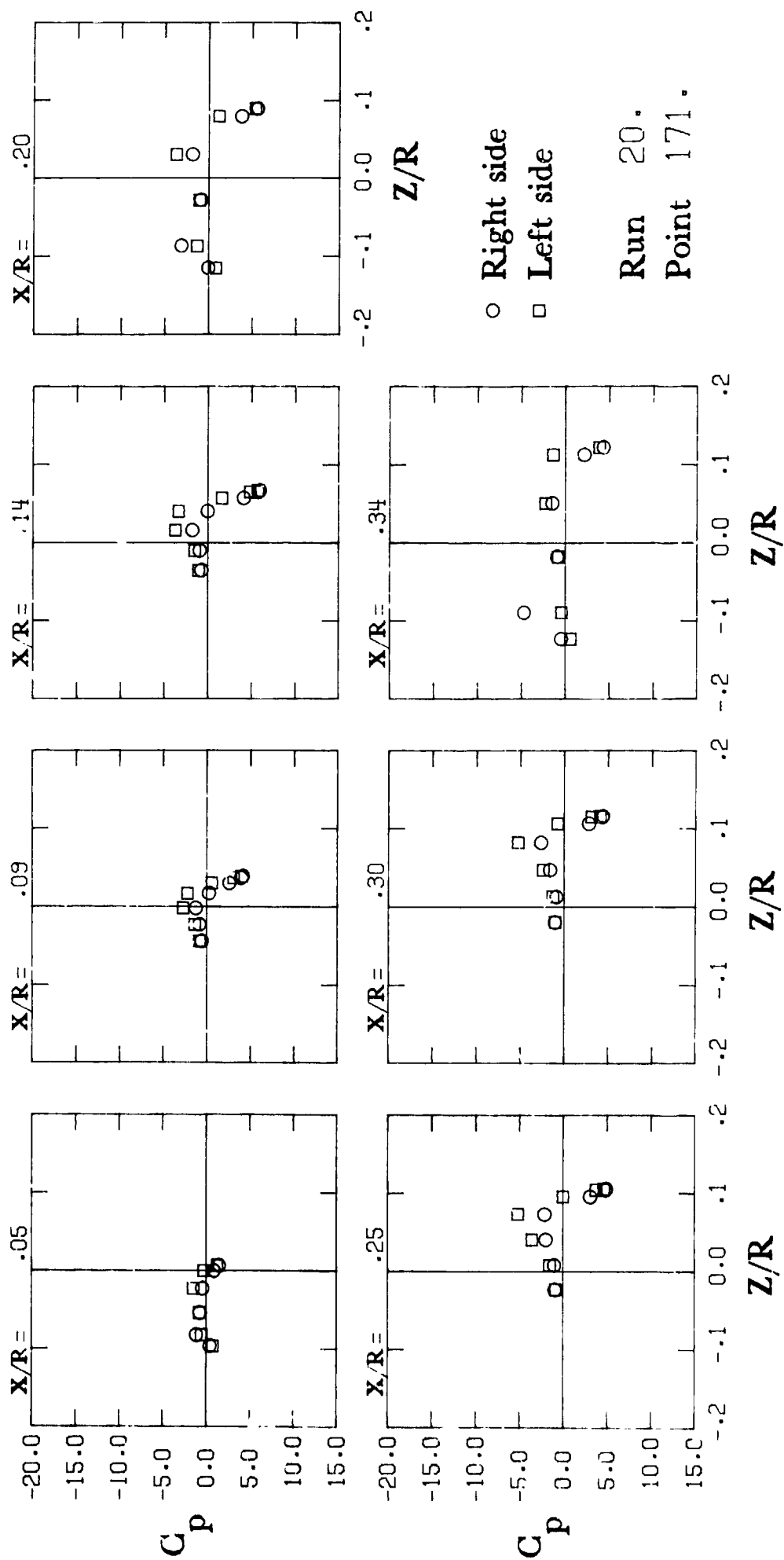


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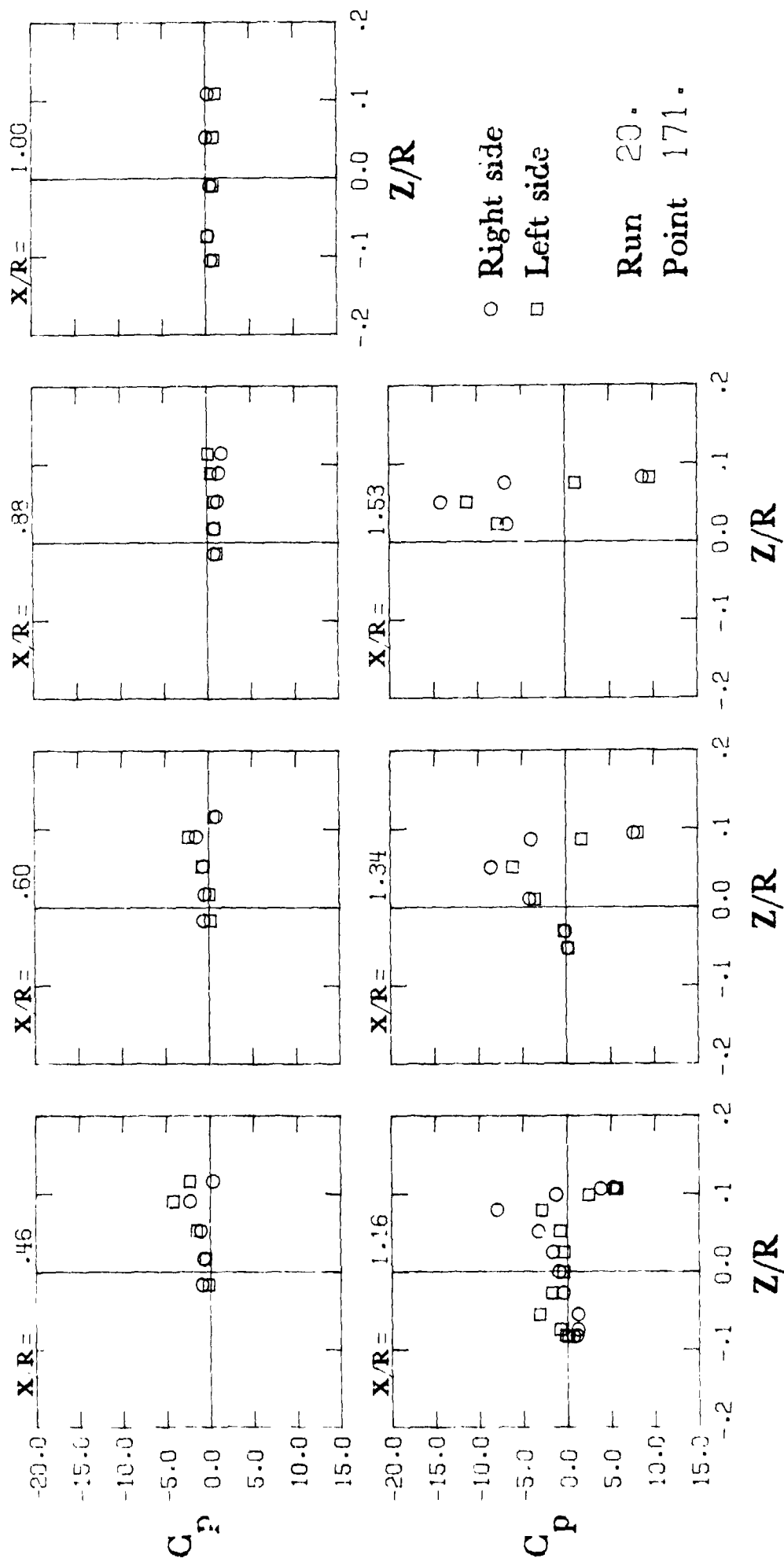


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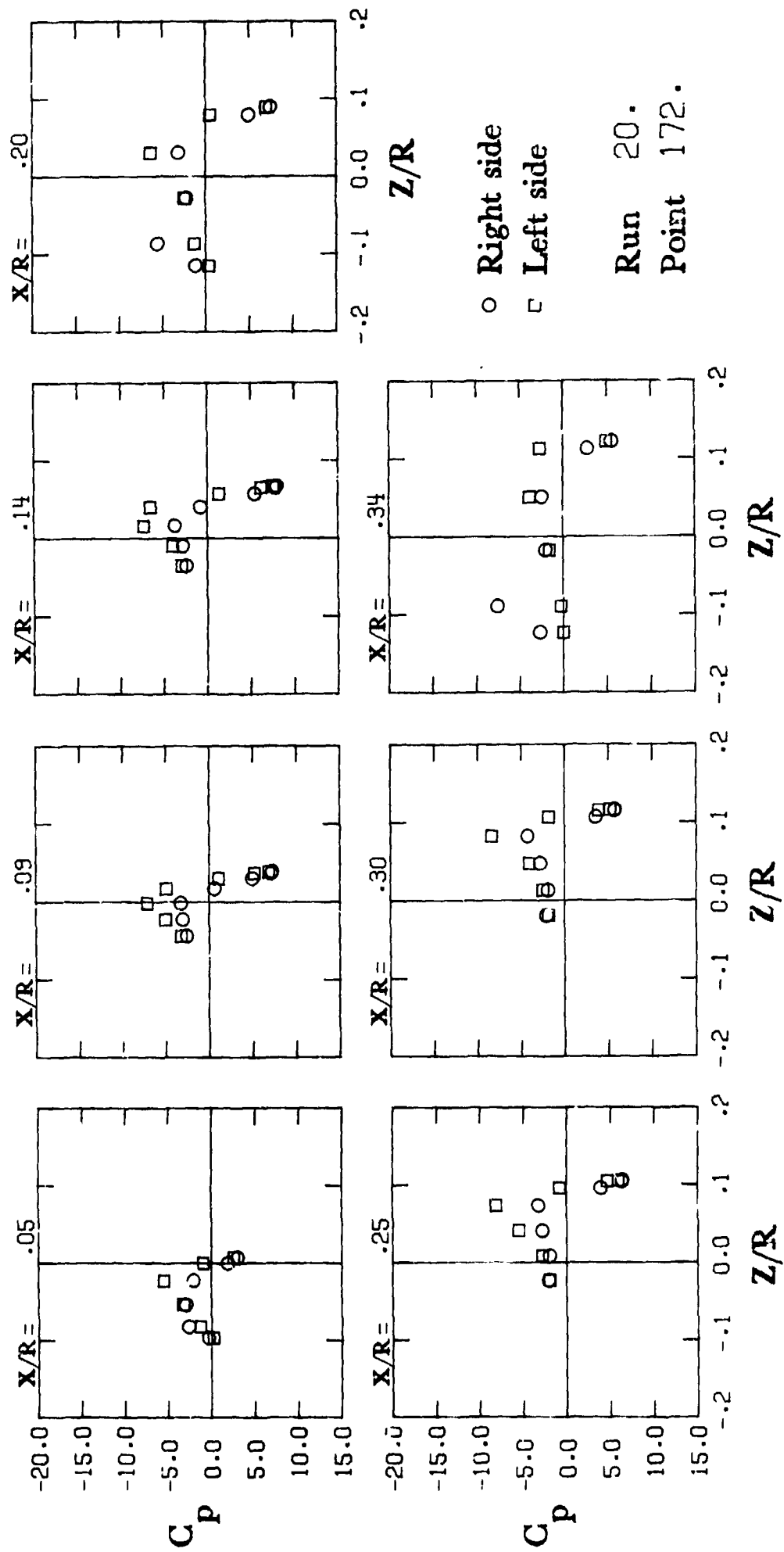


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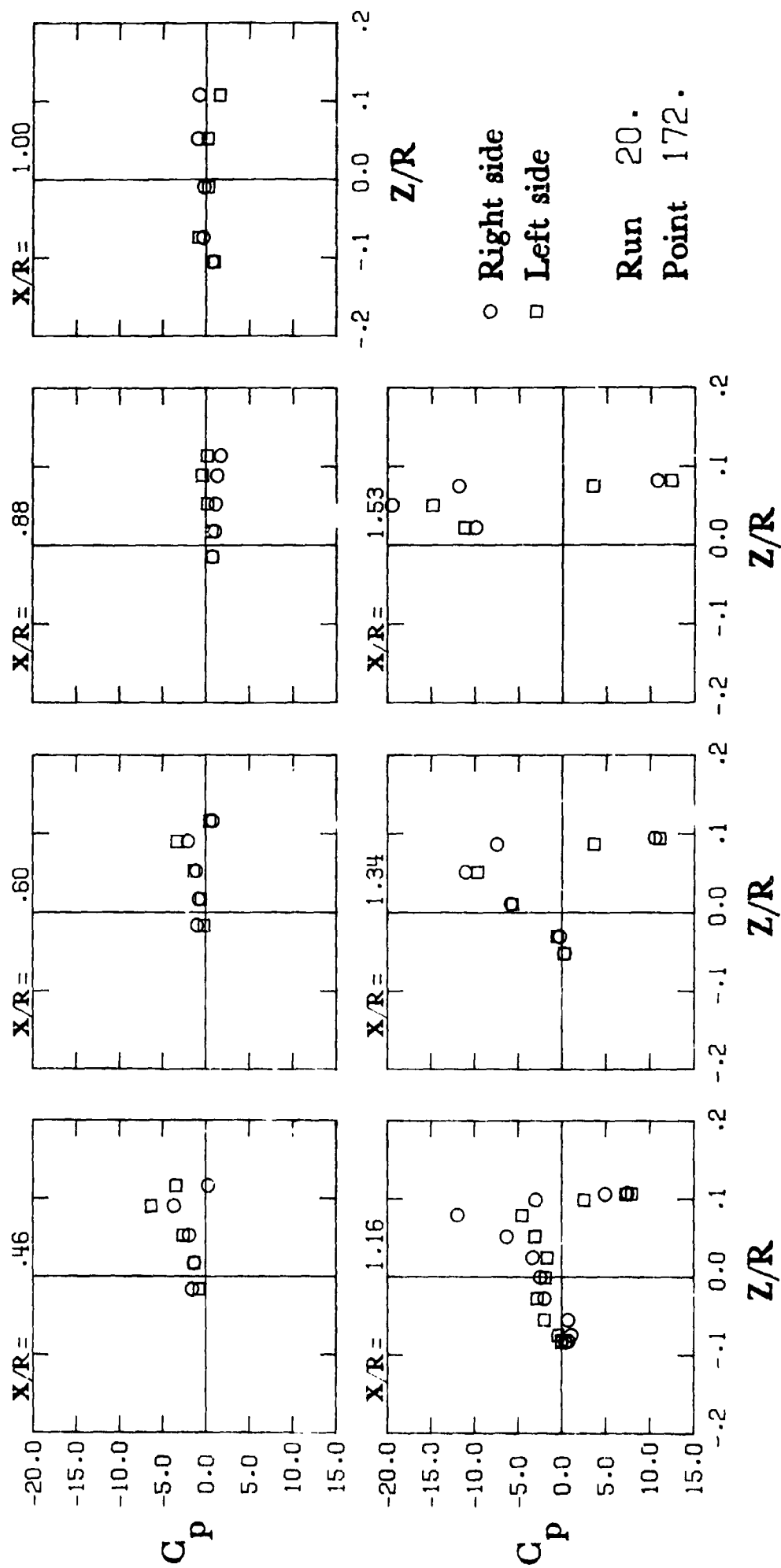


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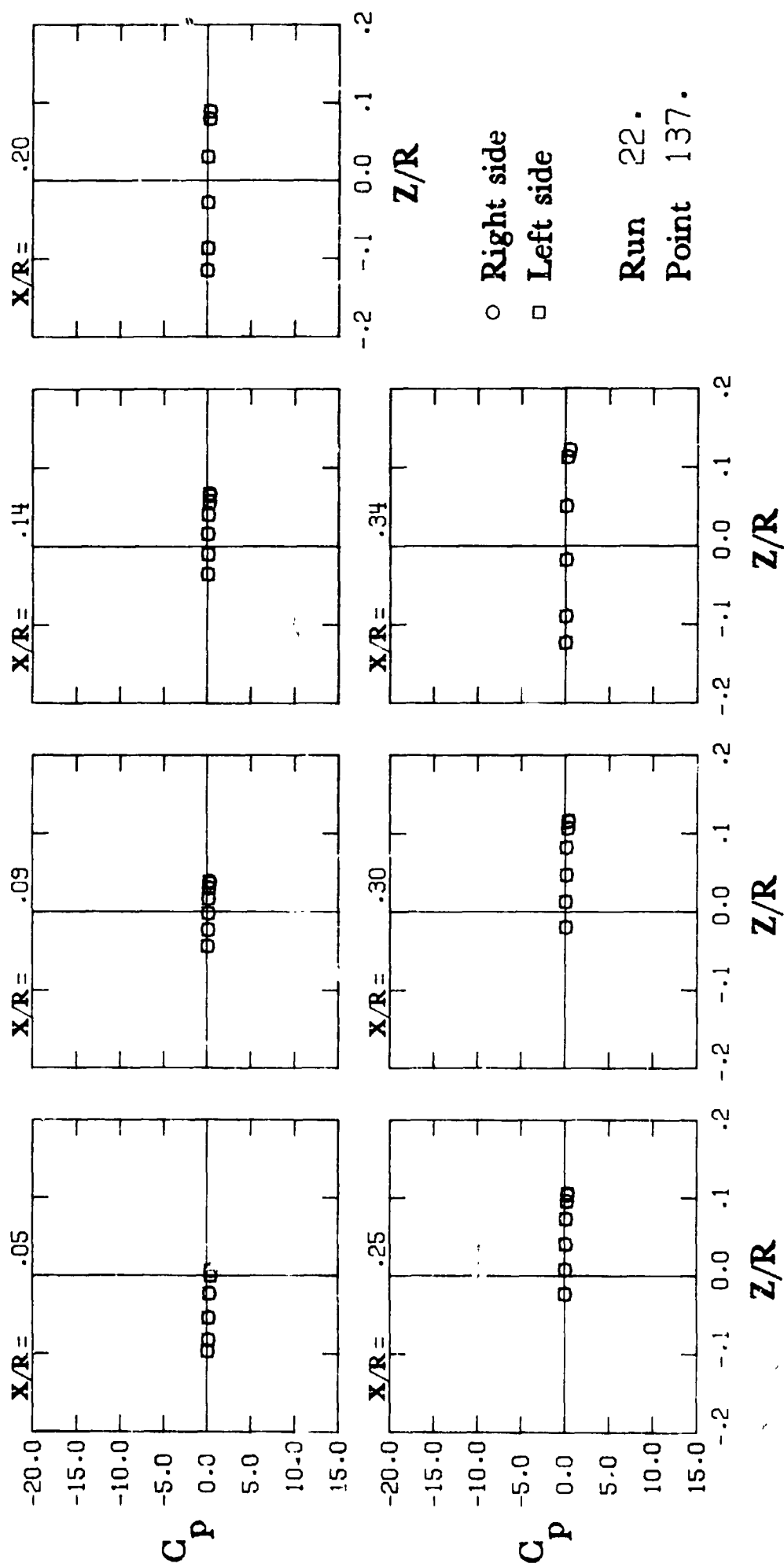


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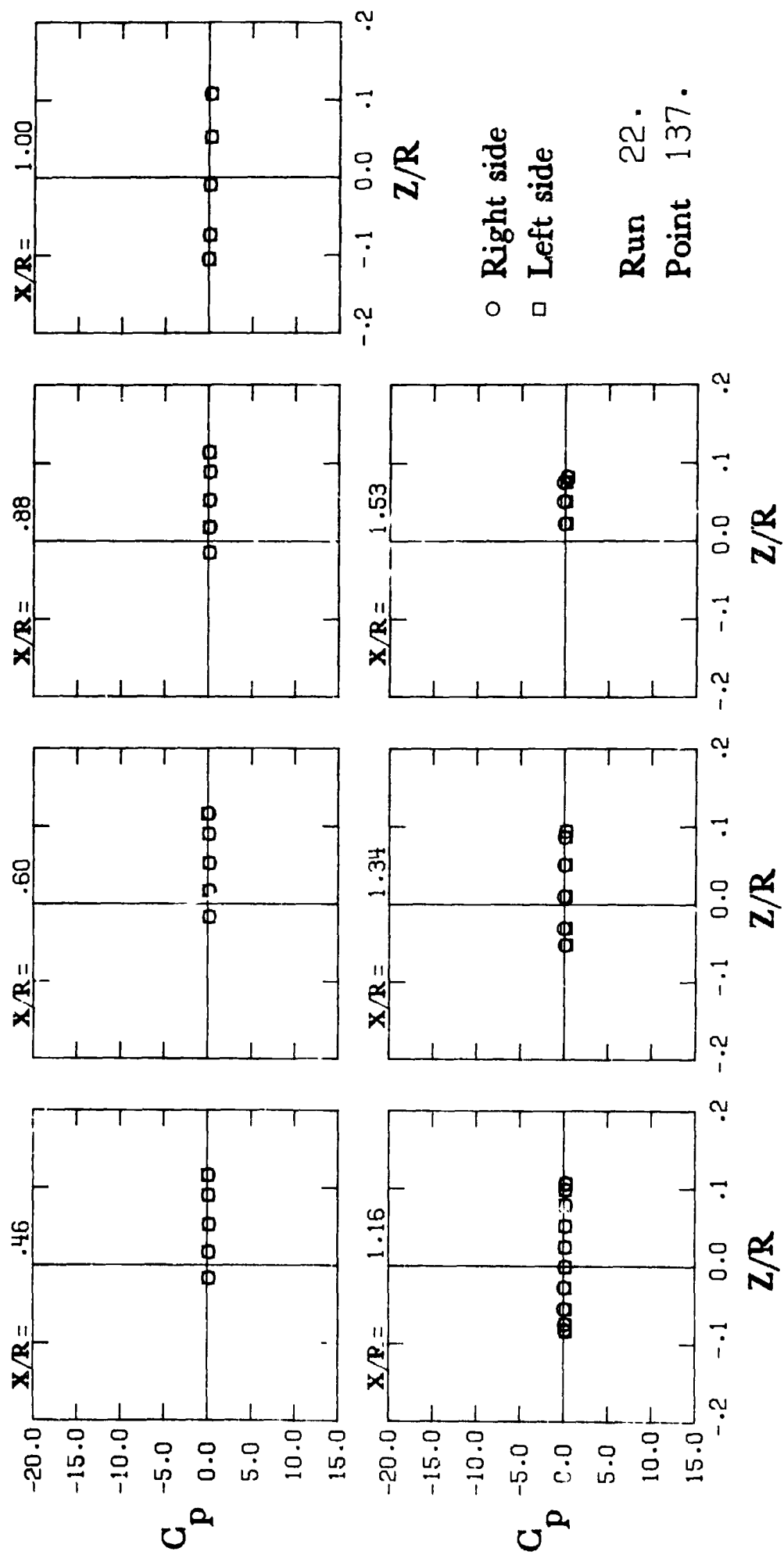


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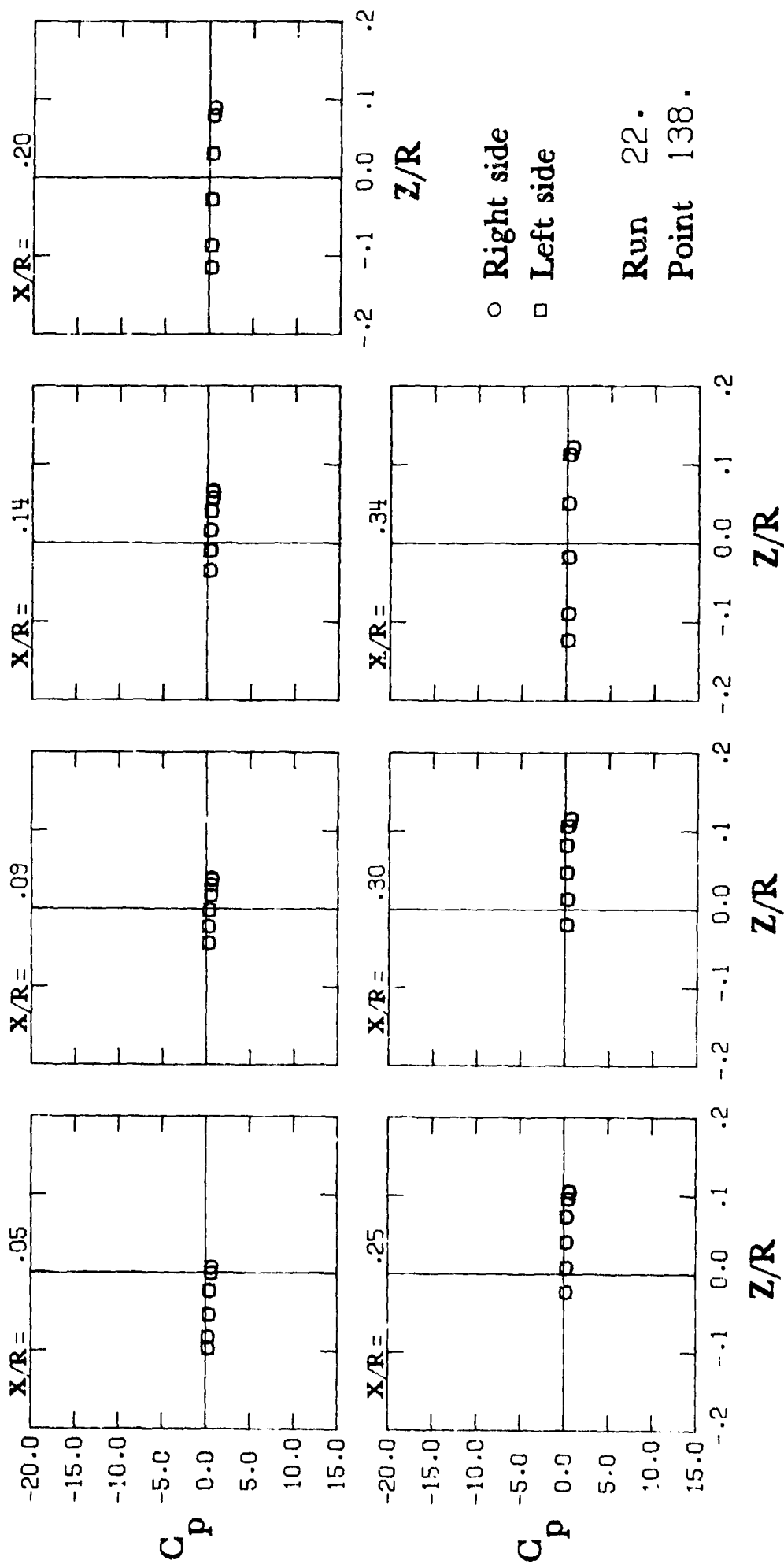


Figure 4. Continued.

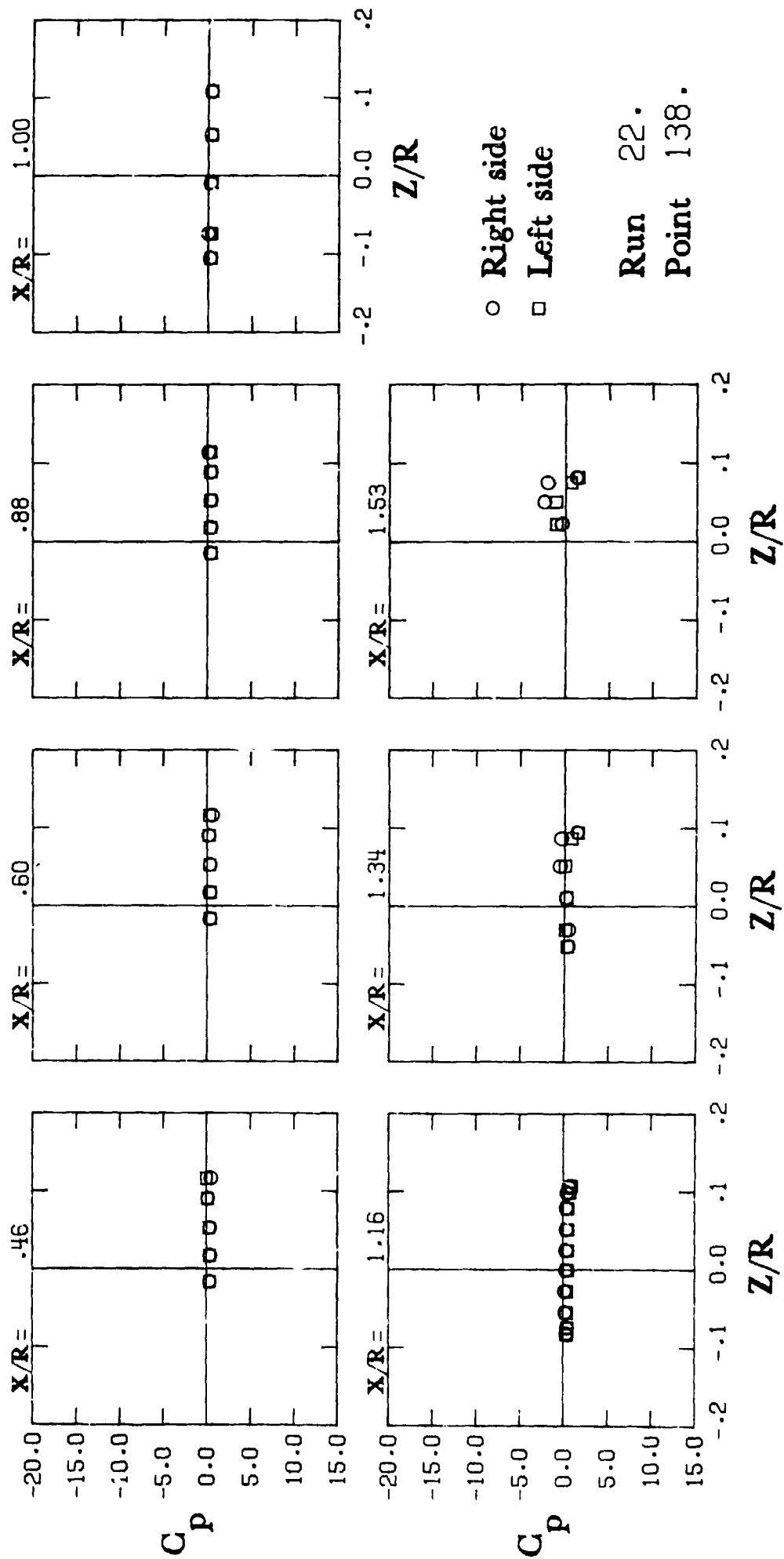


Figure 4. Continued.

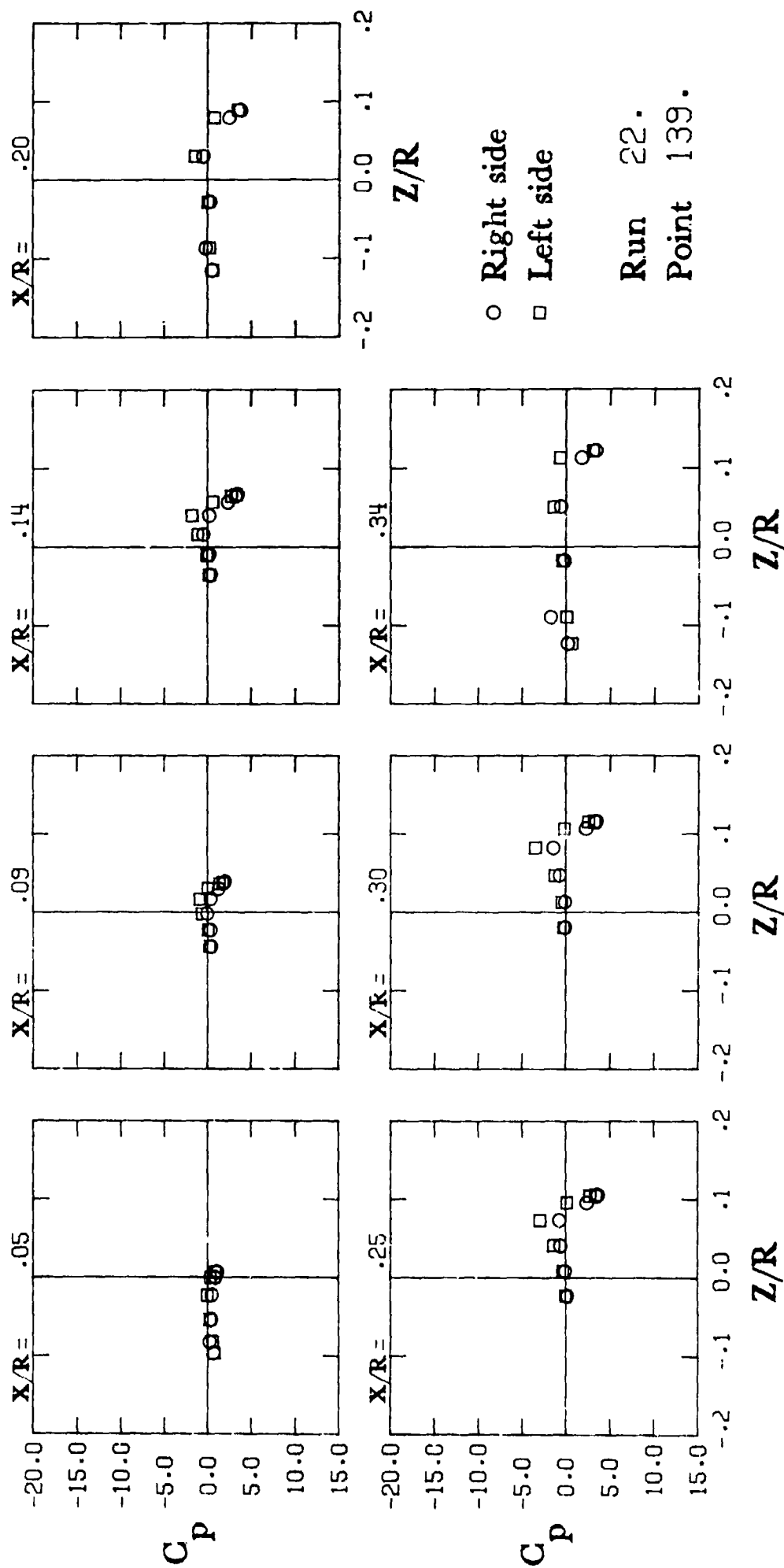


Figure 4. Continued.

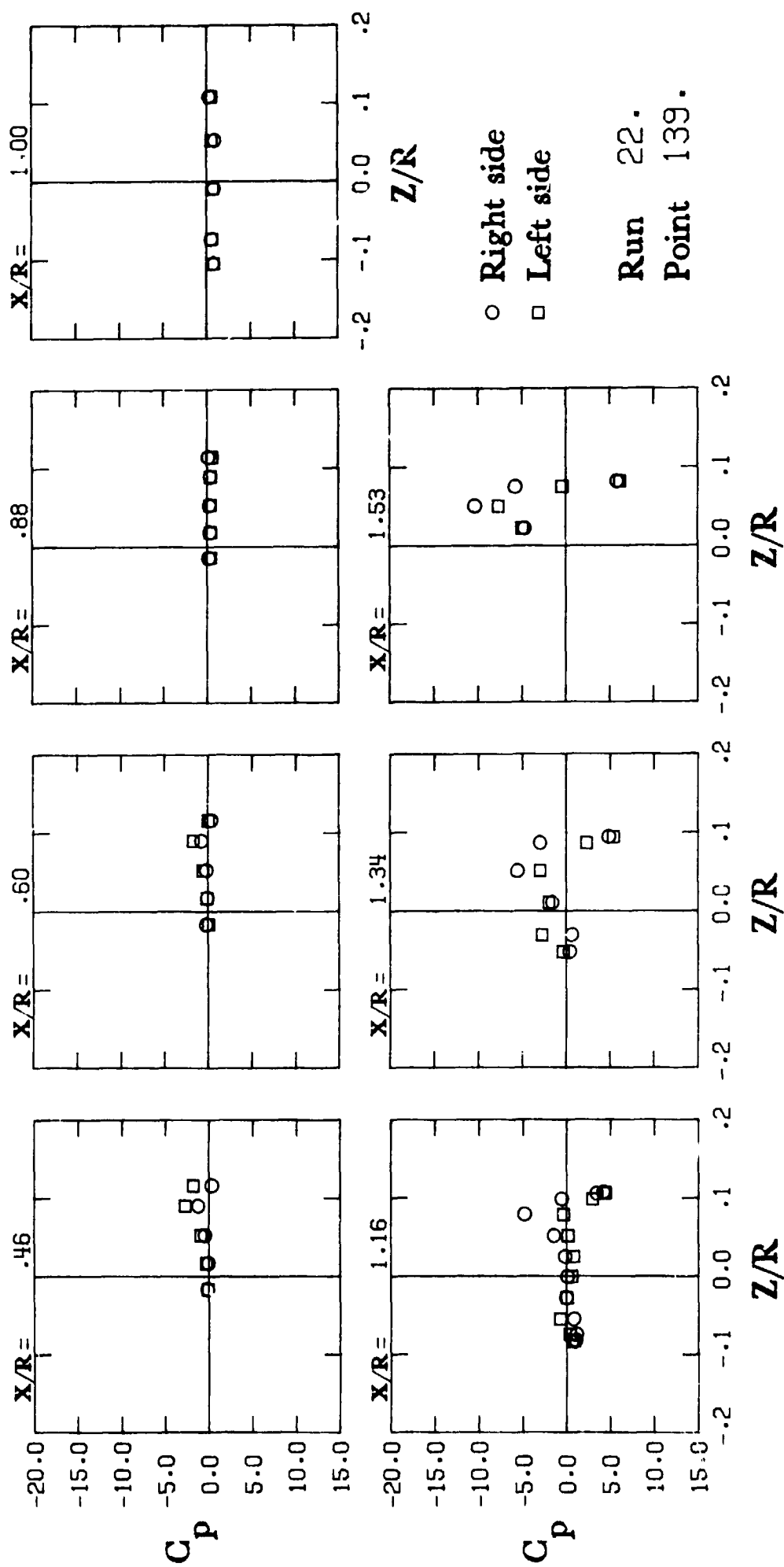


Figure 4. Continued.

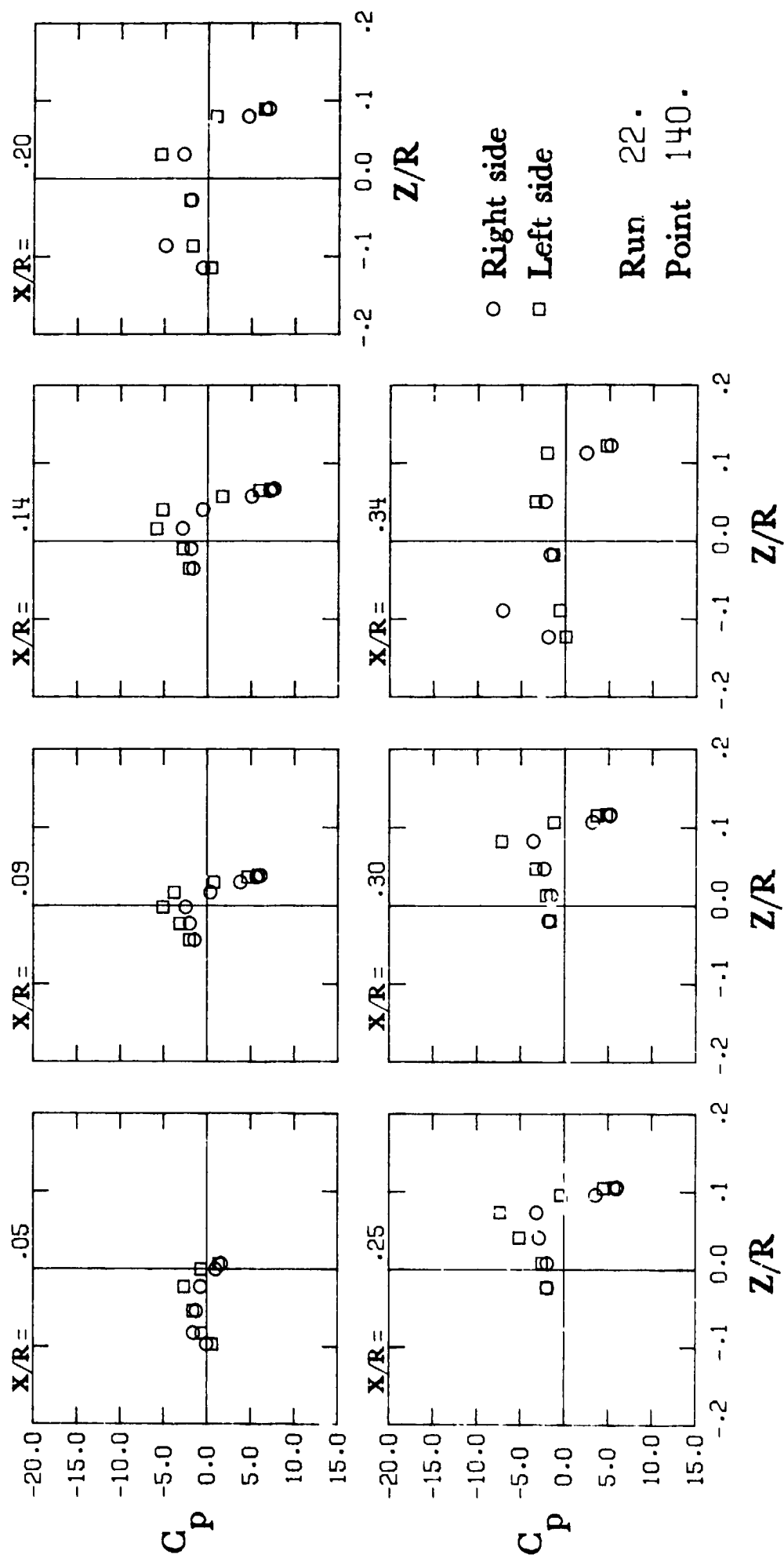


Figure 4. Continued.

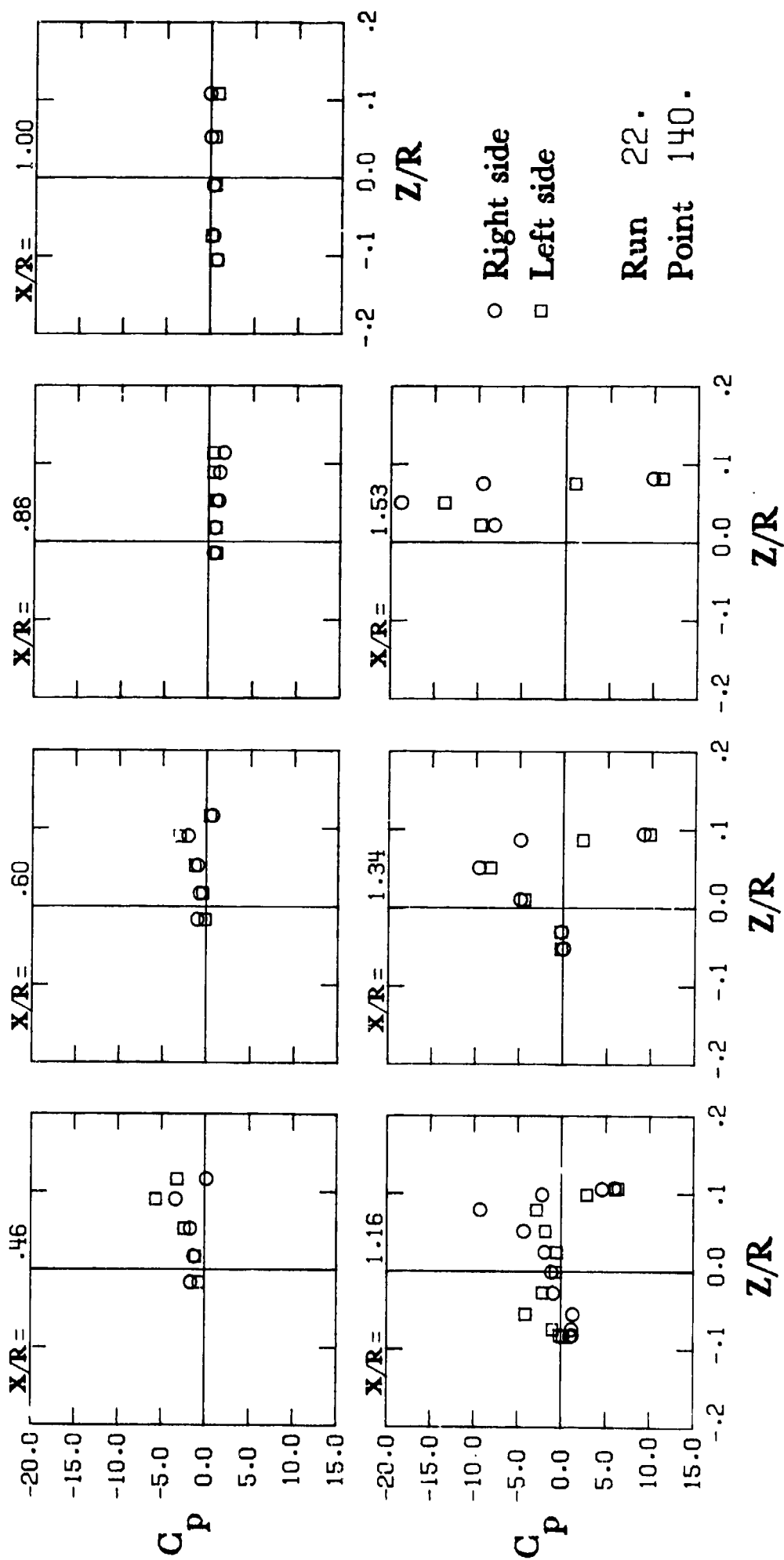


Figure 4. Continued.

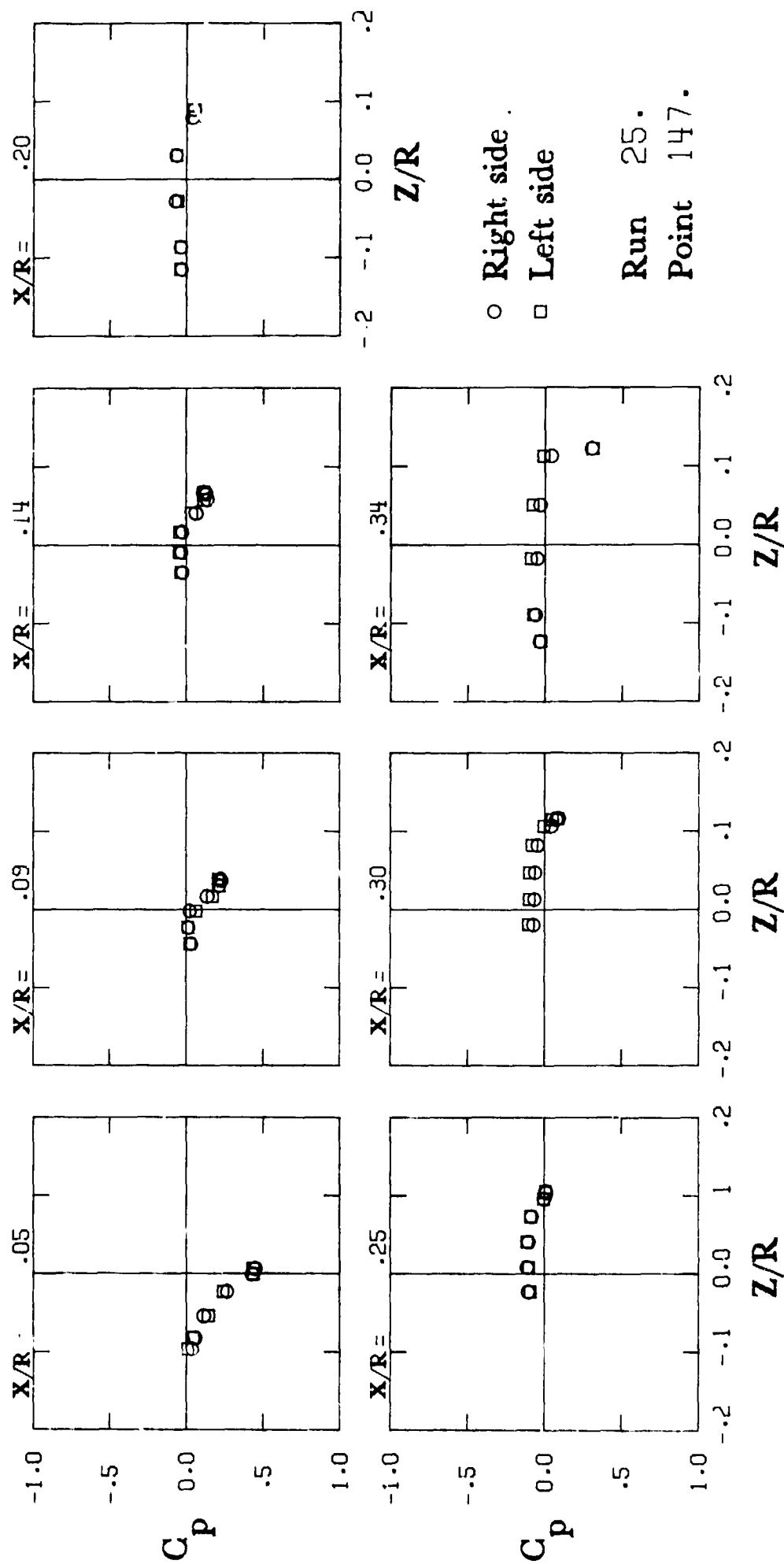


Figure 4. Continued.

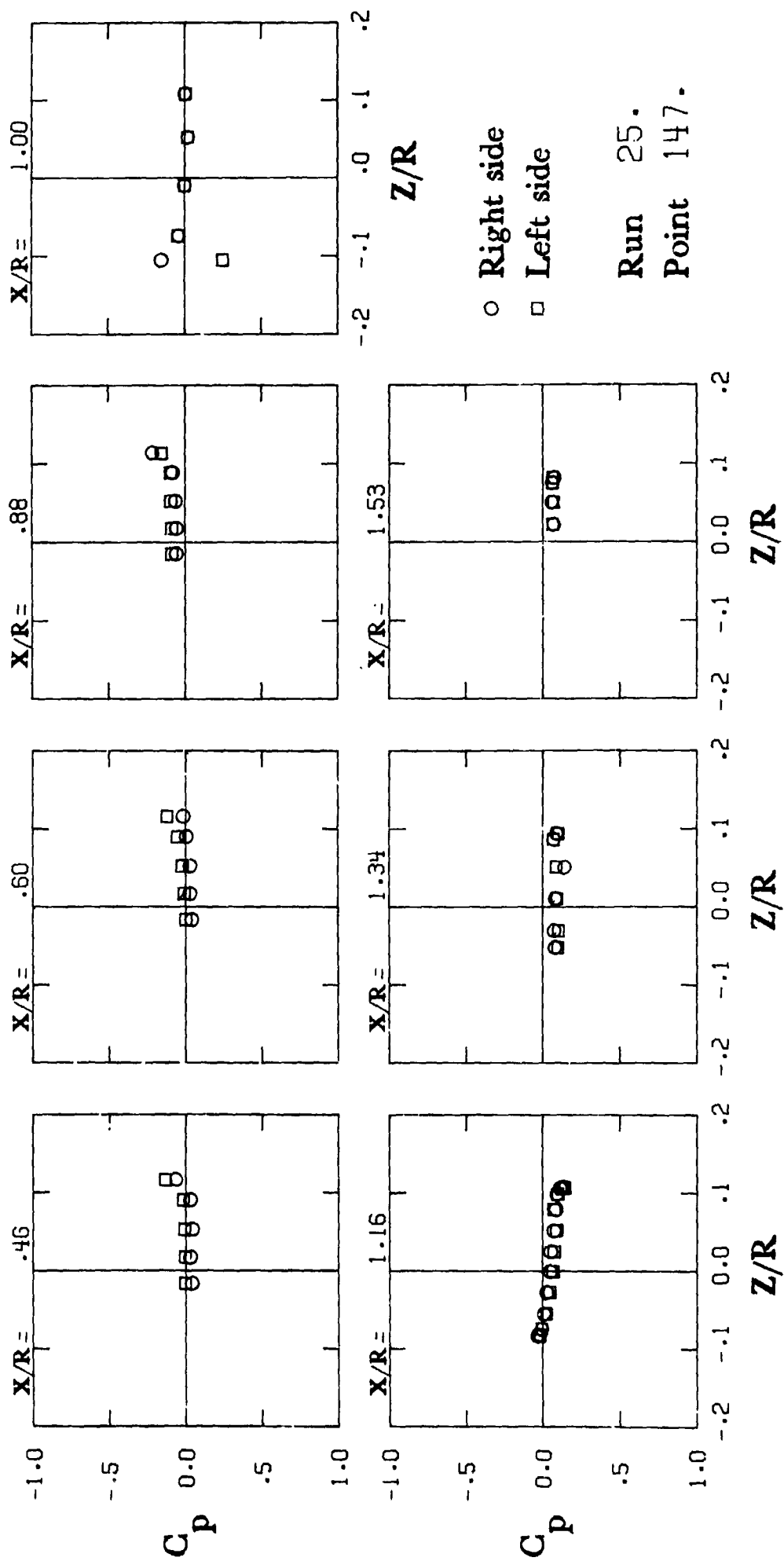


Figure 4. Continued.

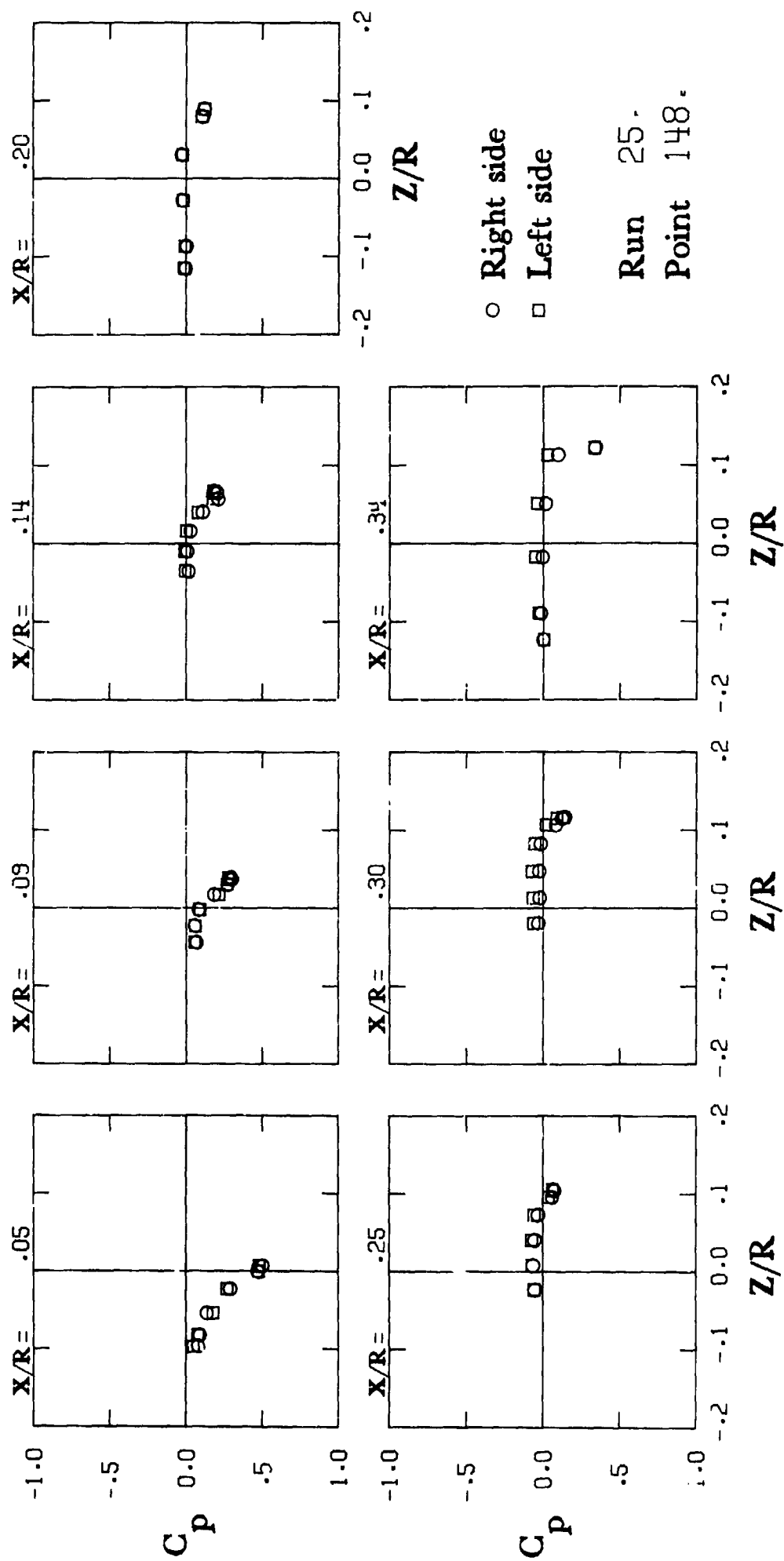


Figure 4. Continued.

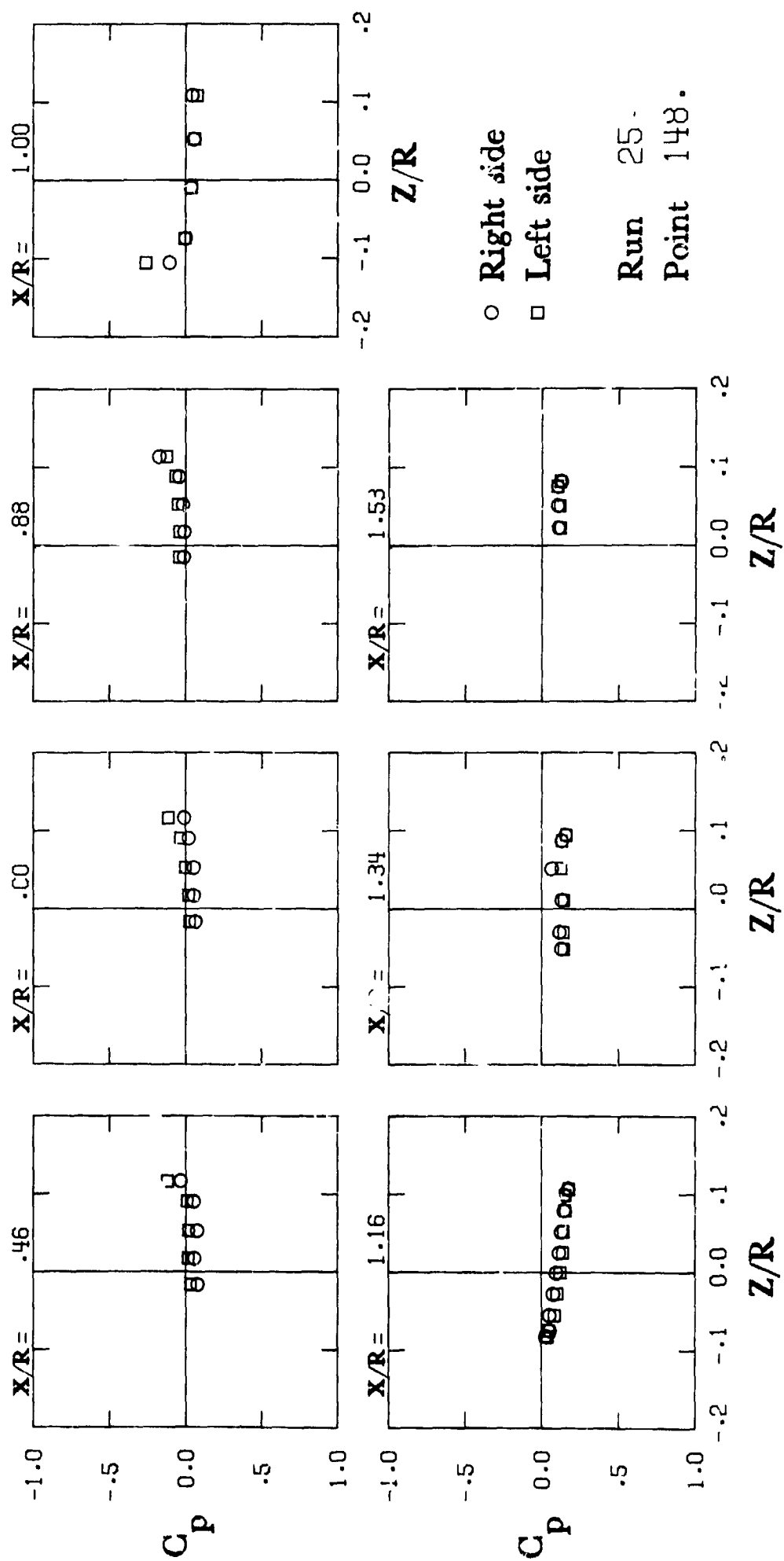


Figure 4. Continued.

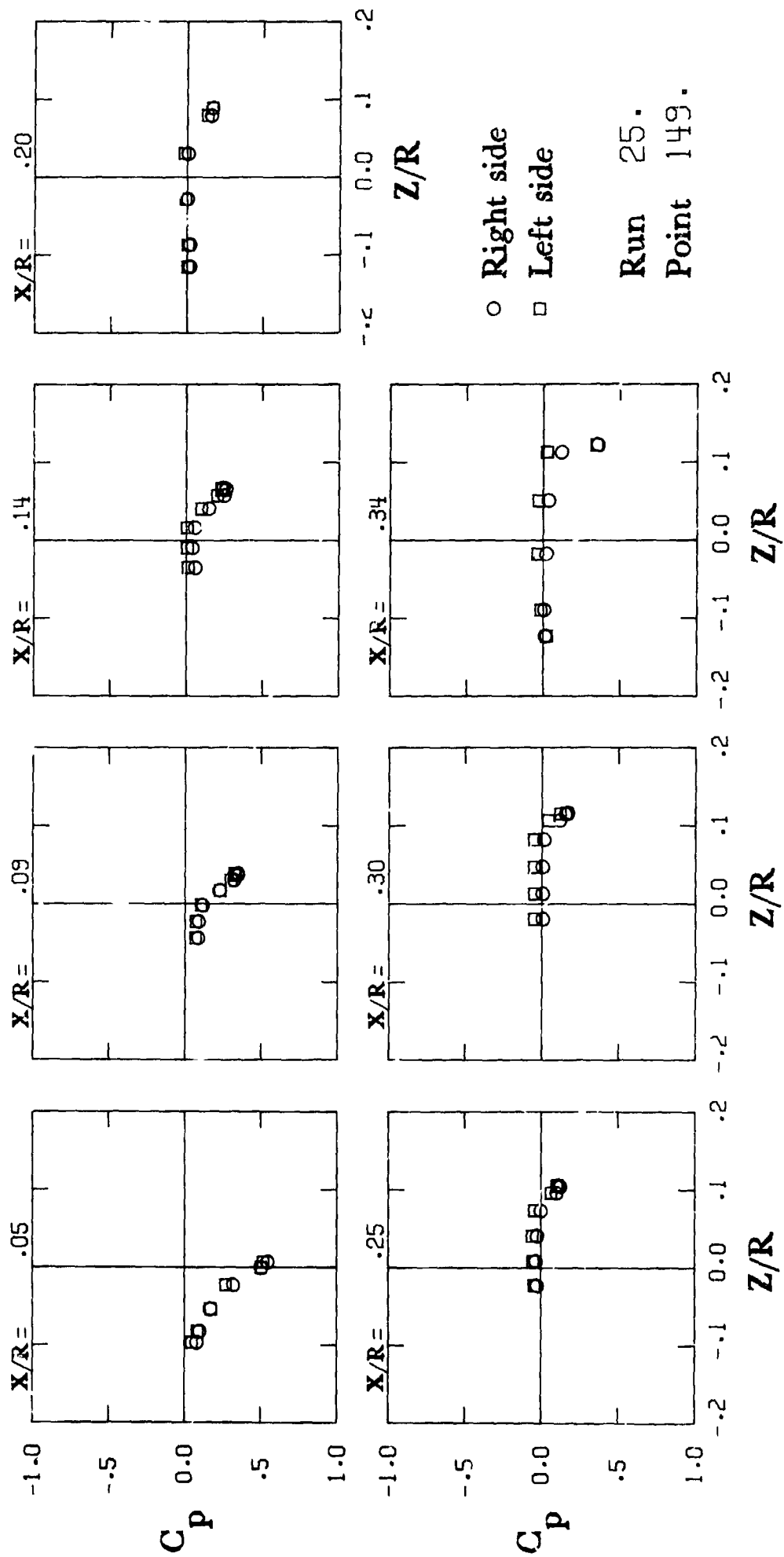


Figure 4. Continued.

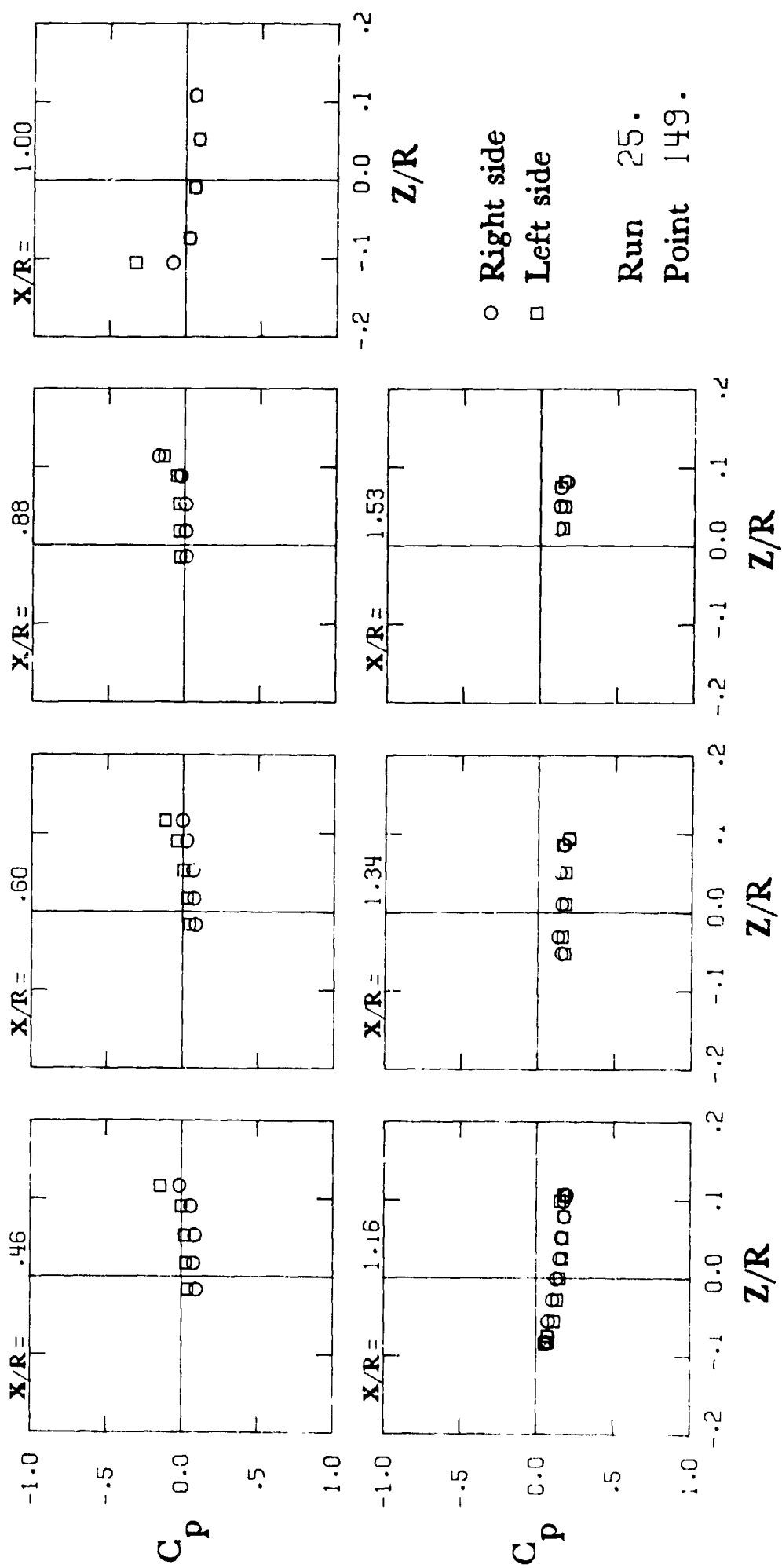


Figure 4. Continued.

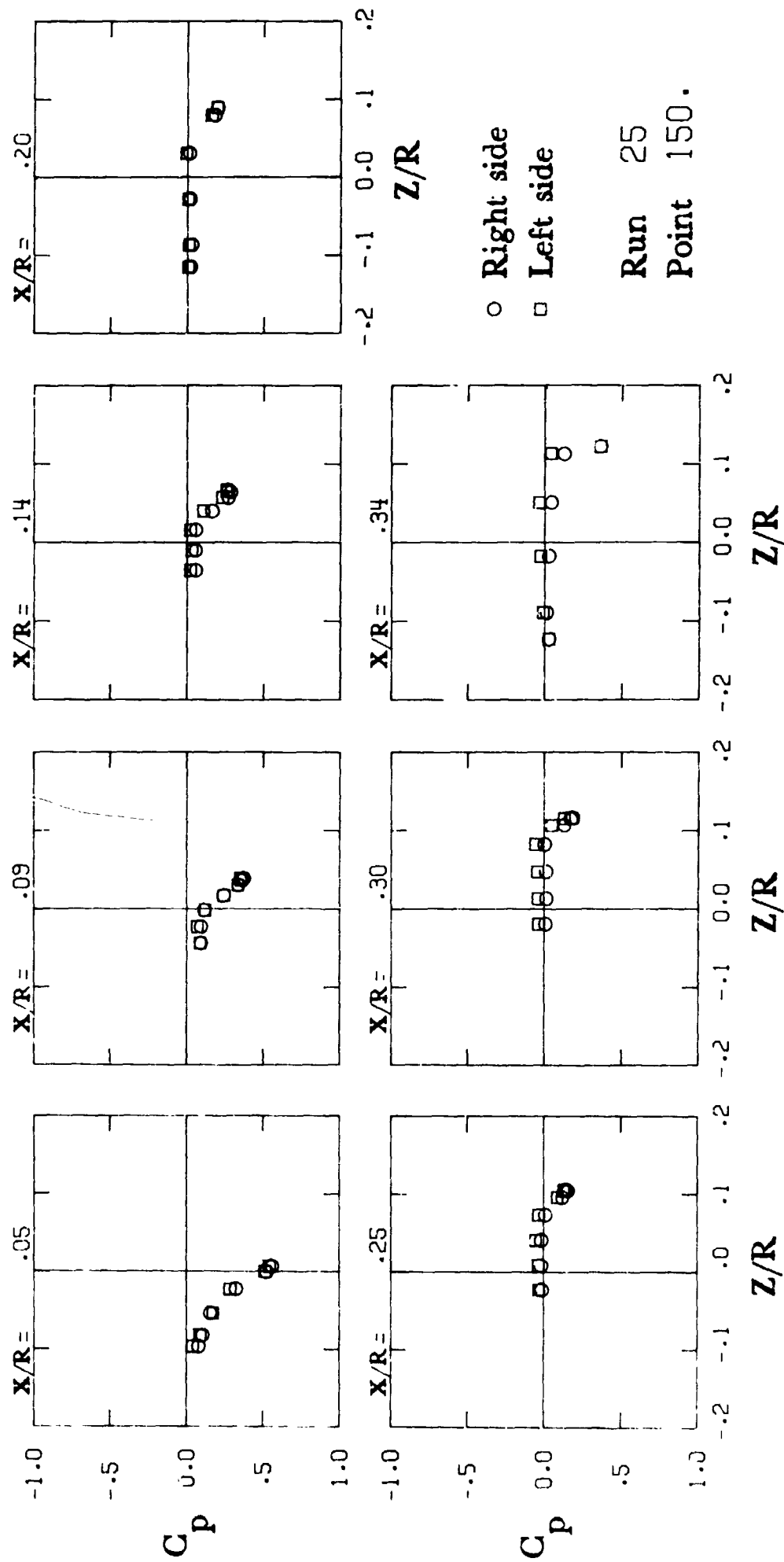


Figure 4. Continued.

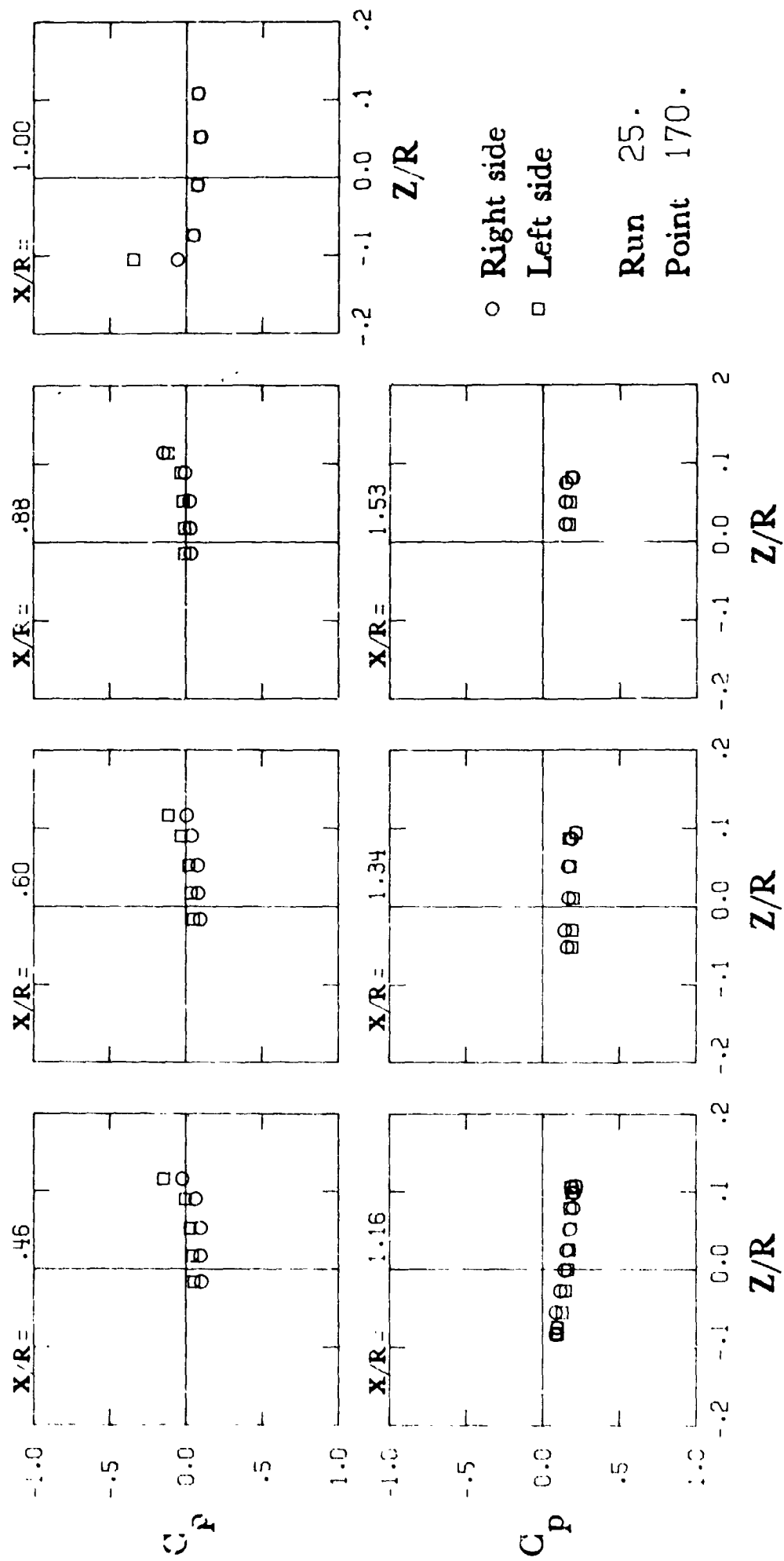


Figure 4. Continued.

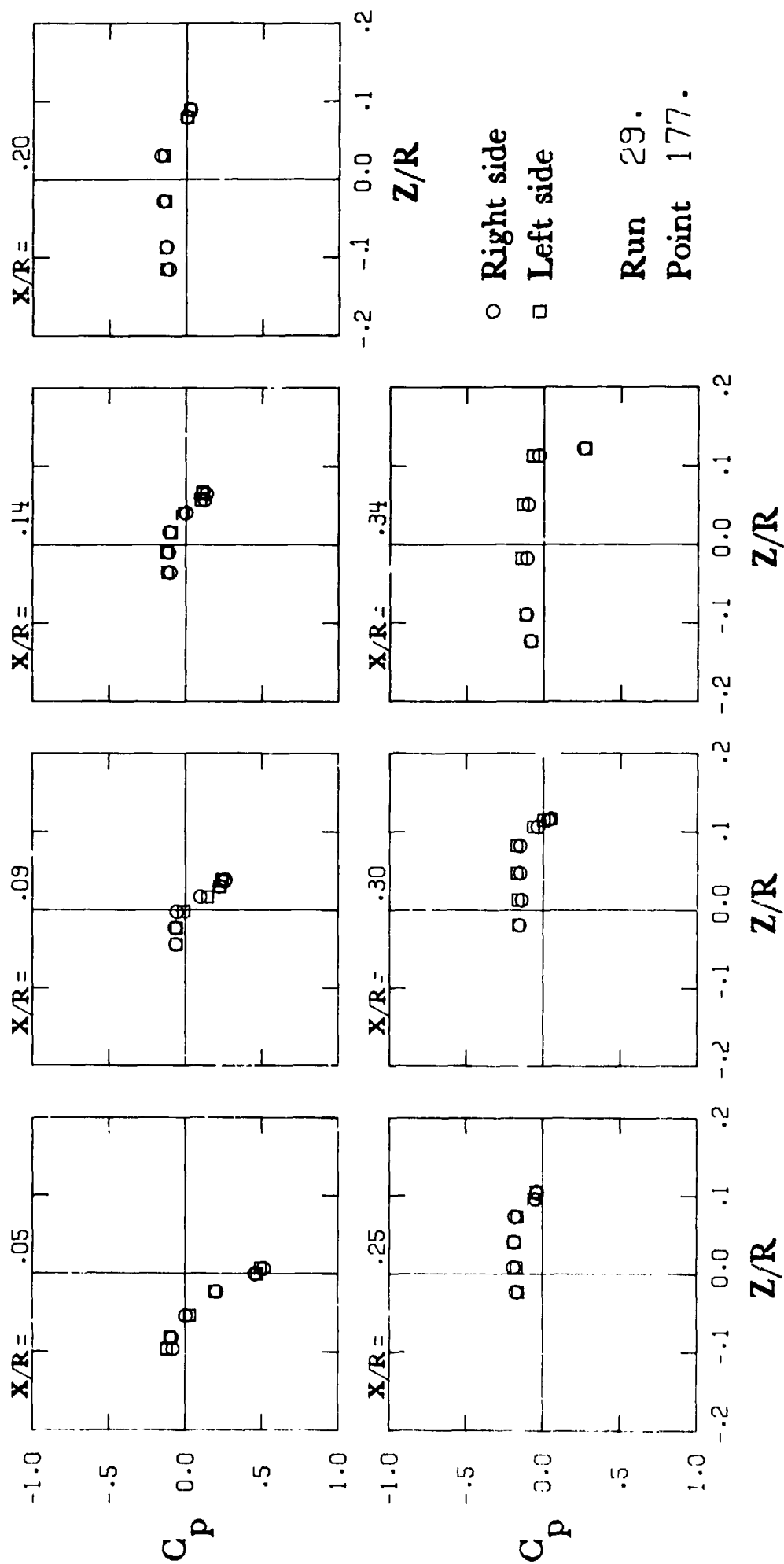


Figure 4. Continued.

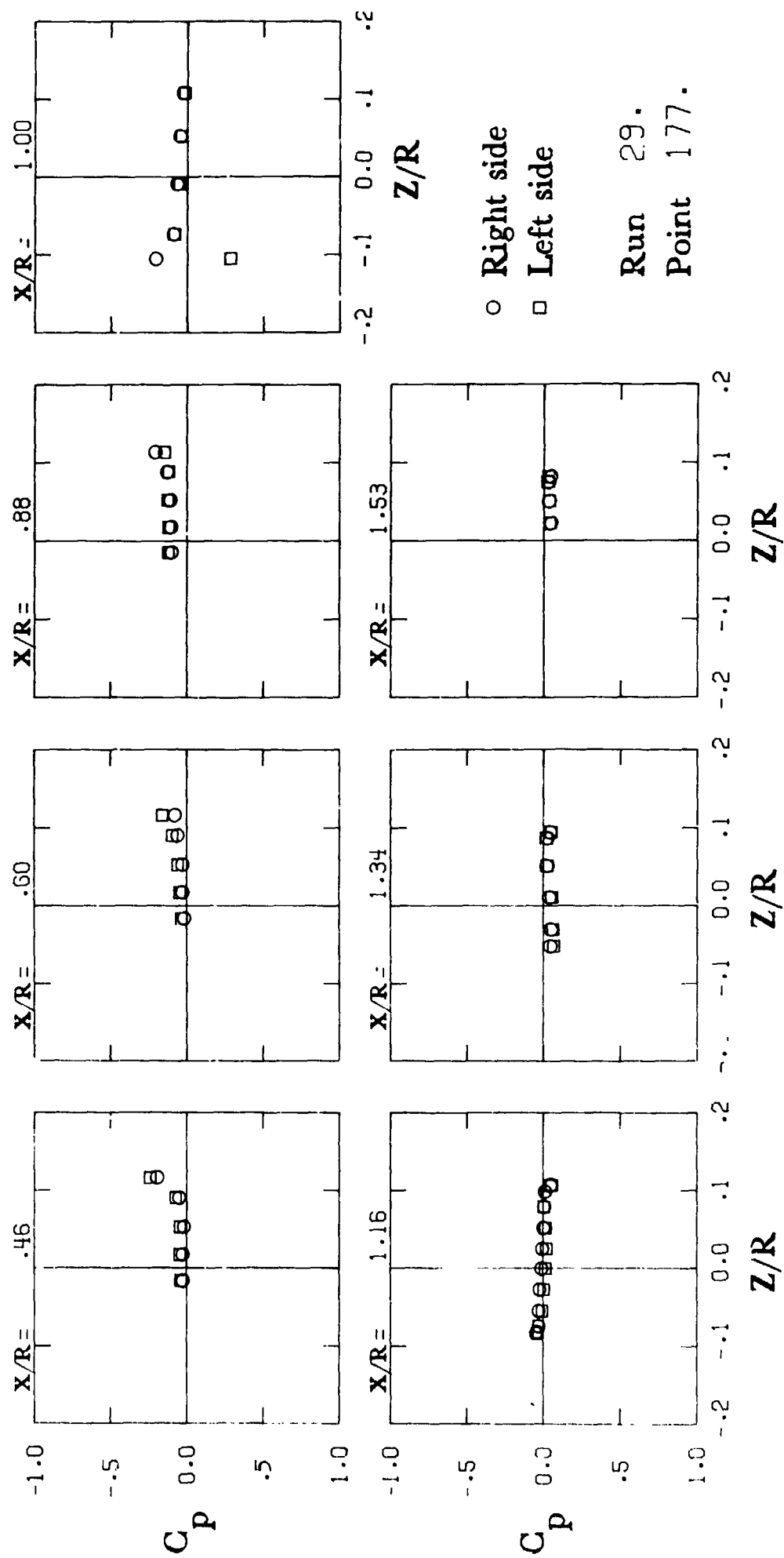


Figure 4. Continued.

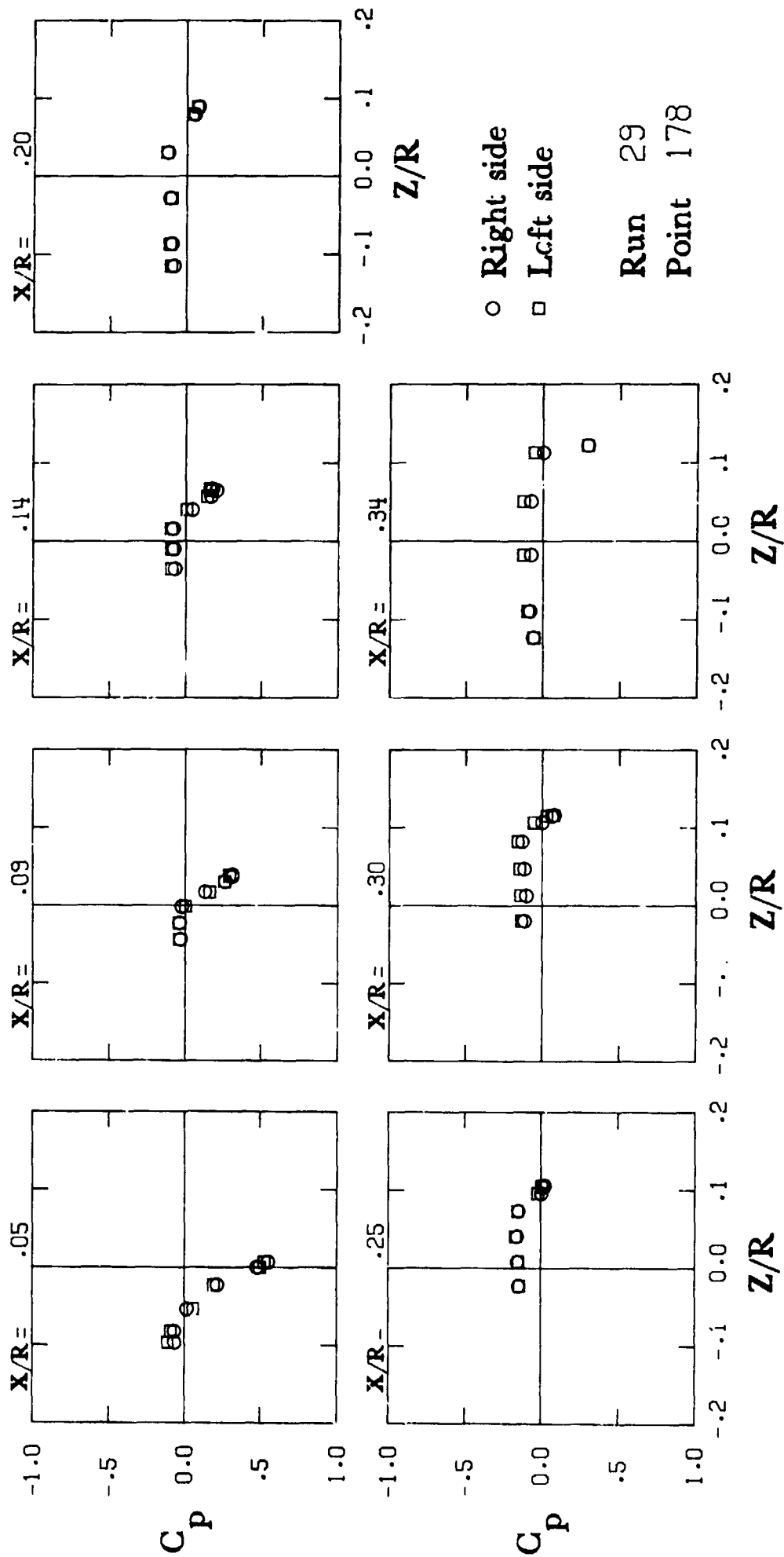


Figure 4. Continued.

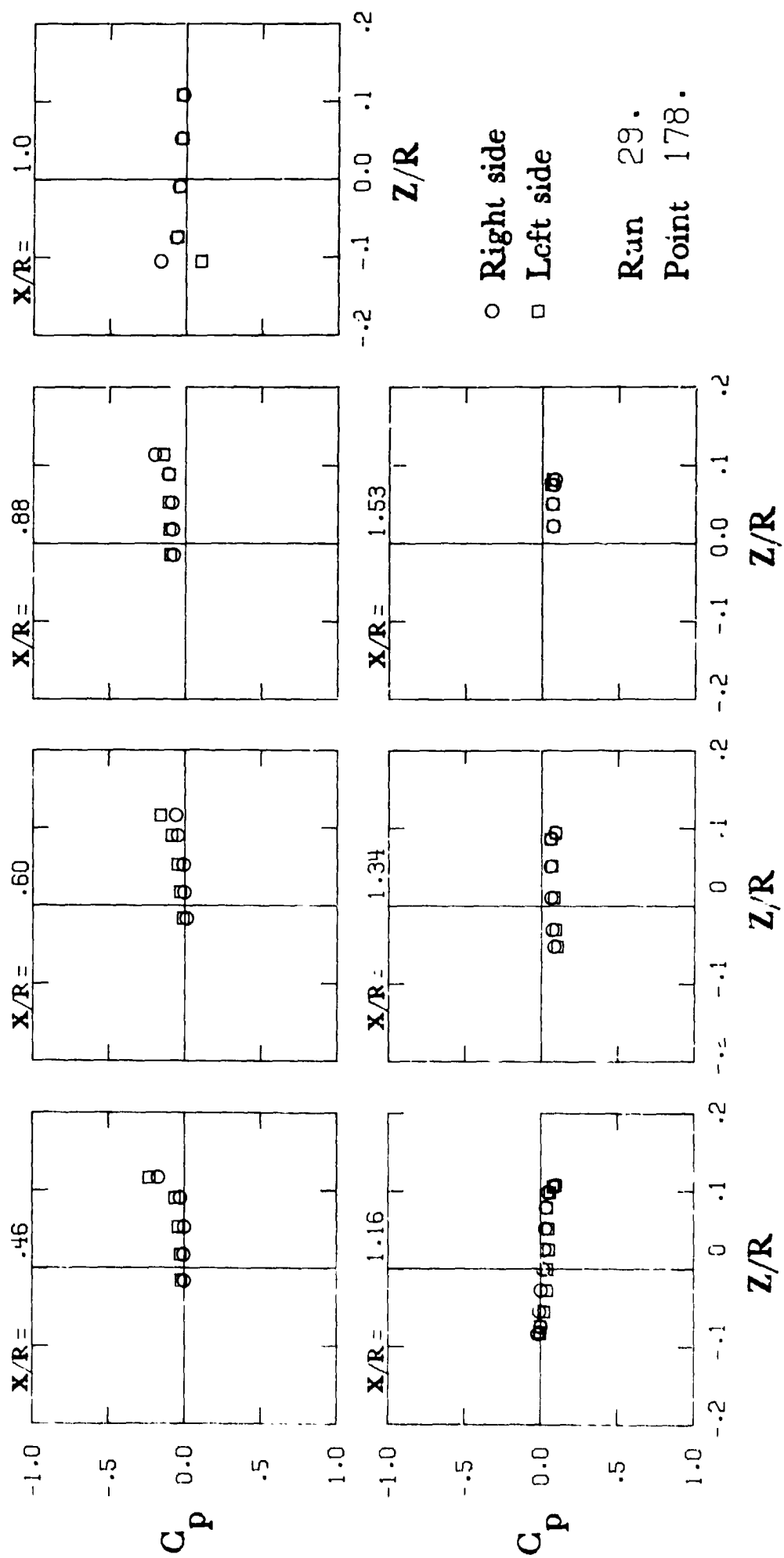


Figure 4. Continued.

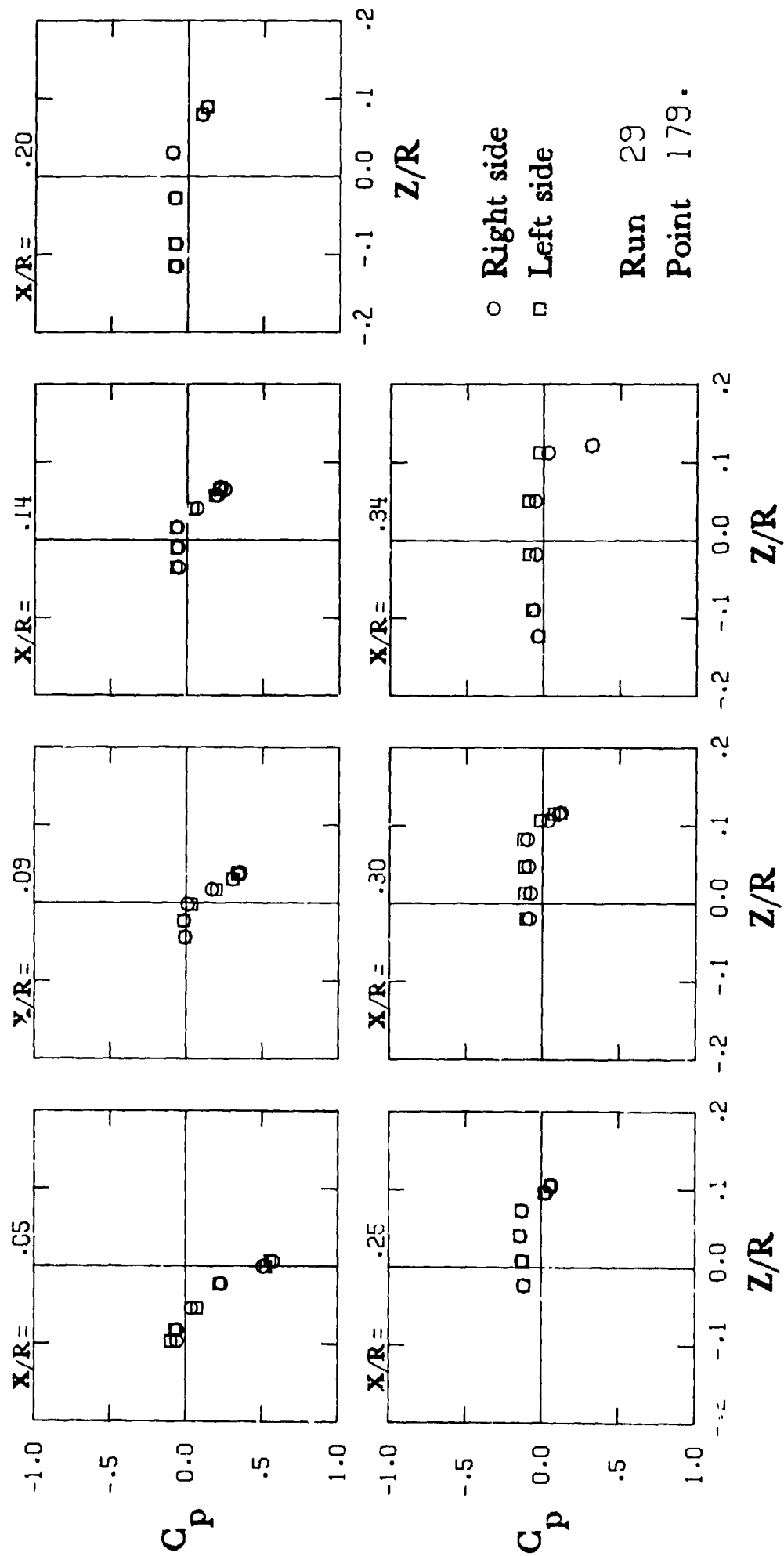


Figure 4. Continued.

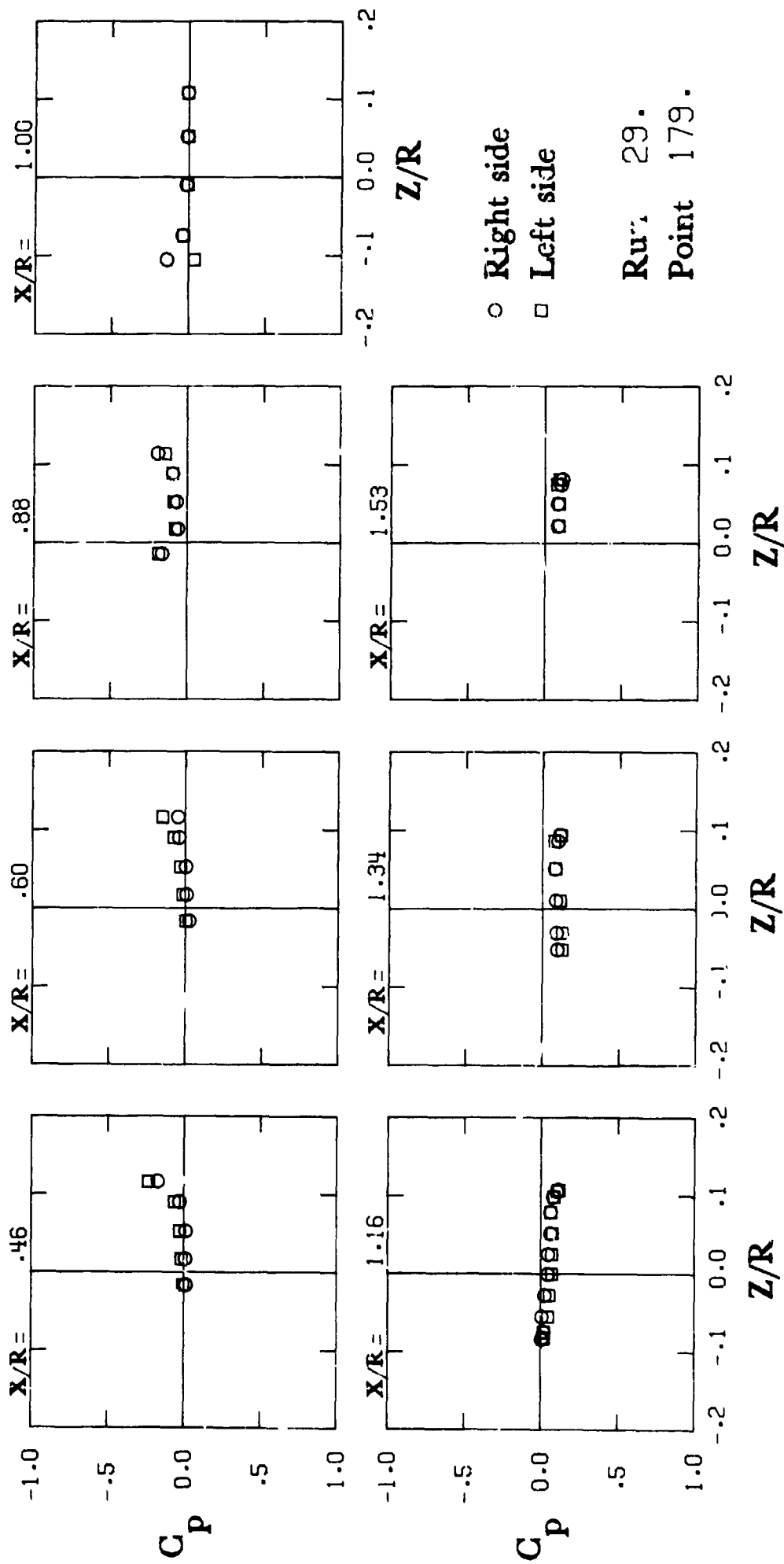


Figure 4. Continued.

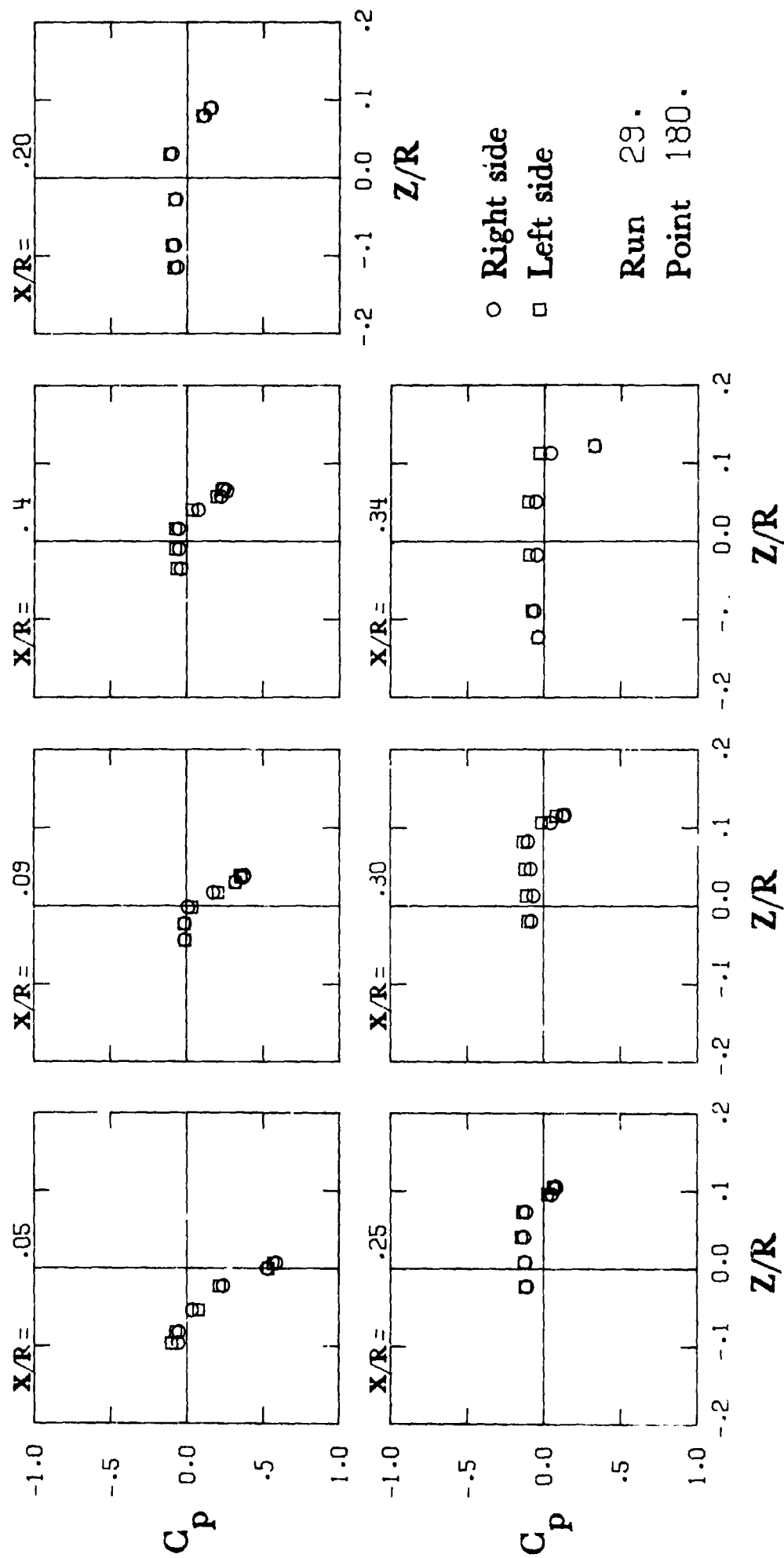
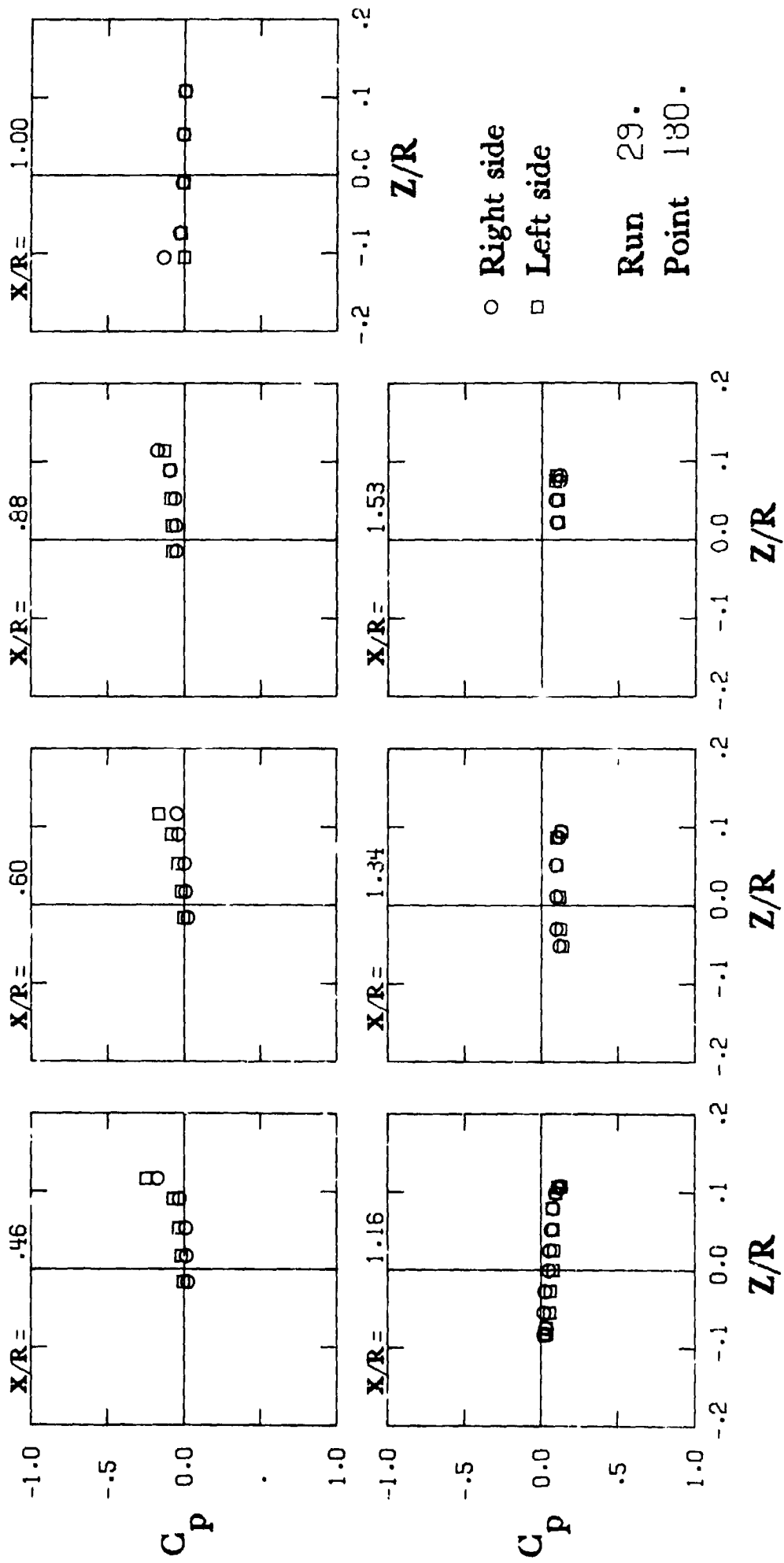


Figure 4. Continued.



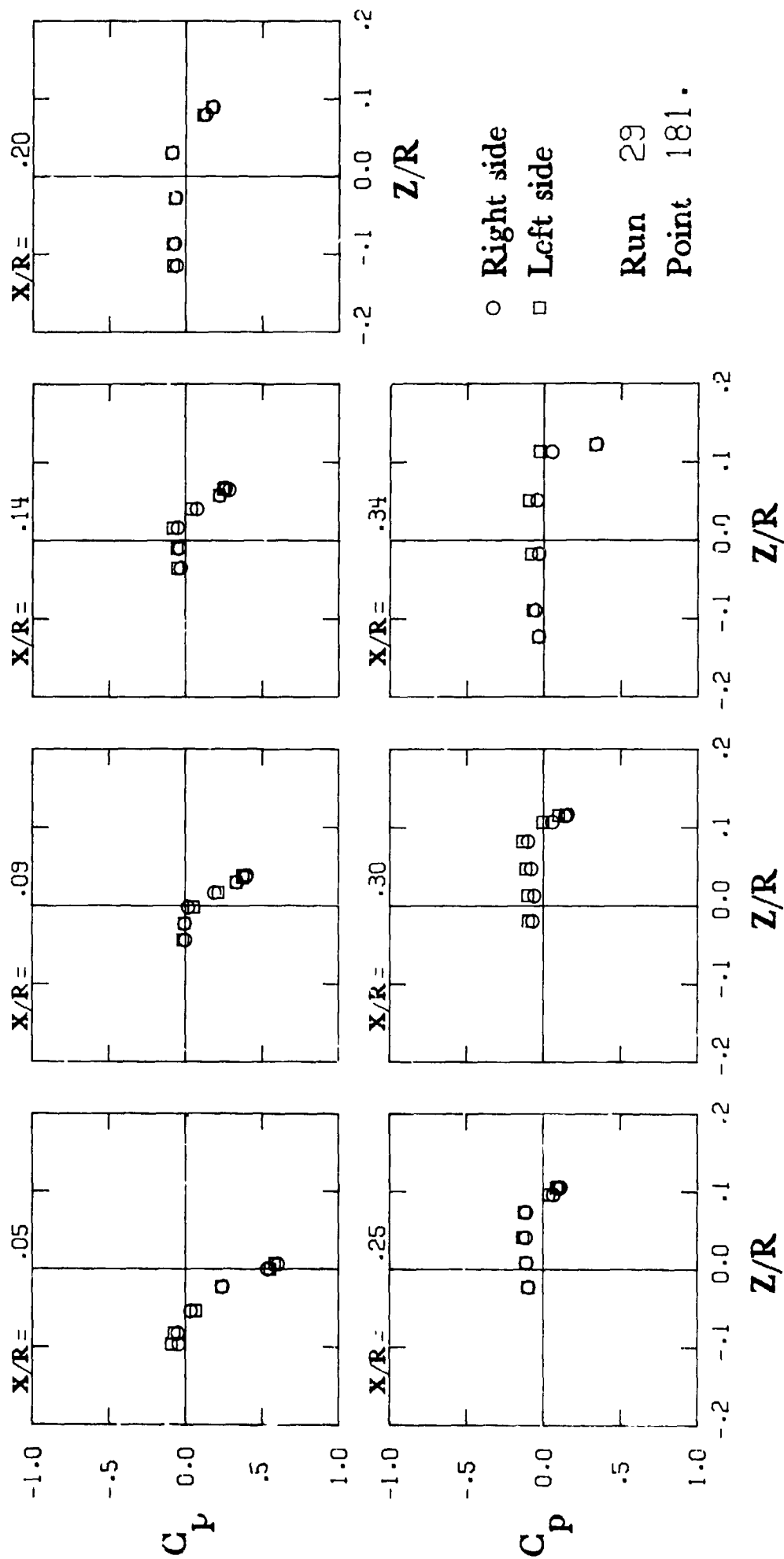


Figure 4. Continued.

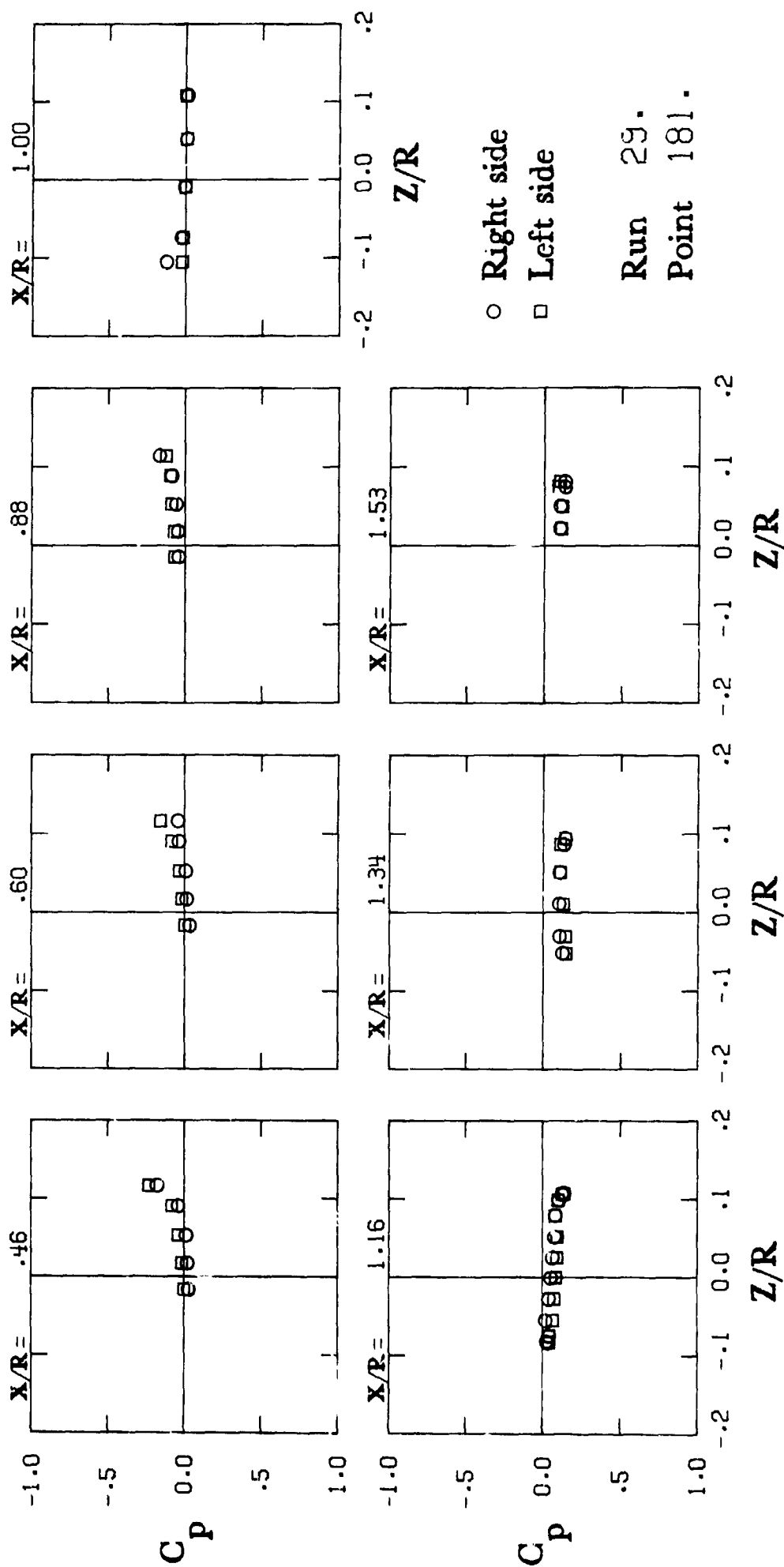


Figure 4. Continued.

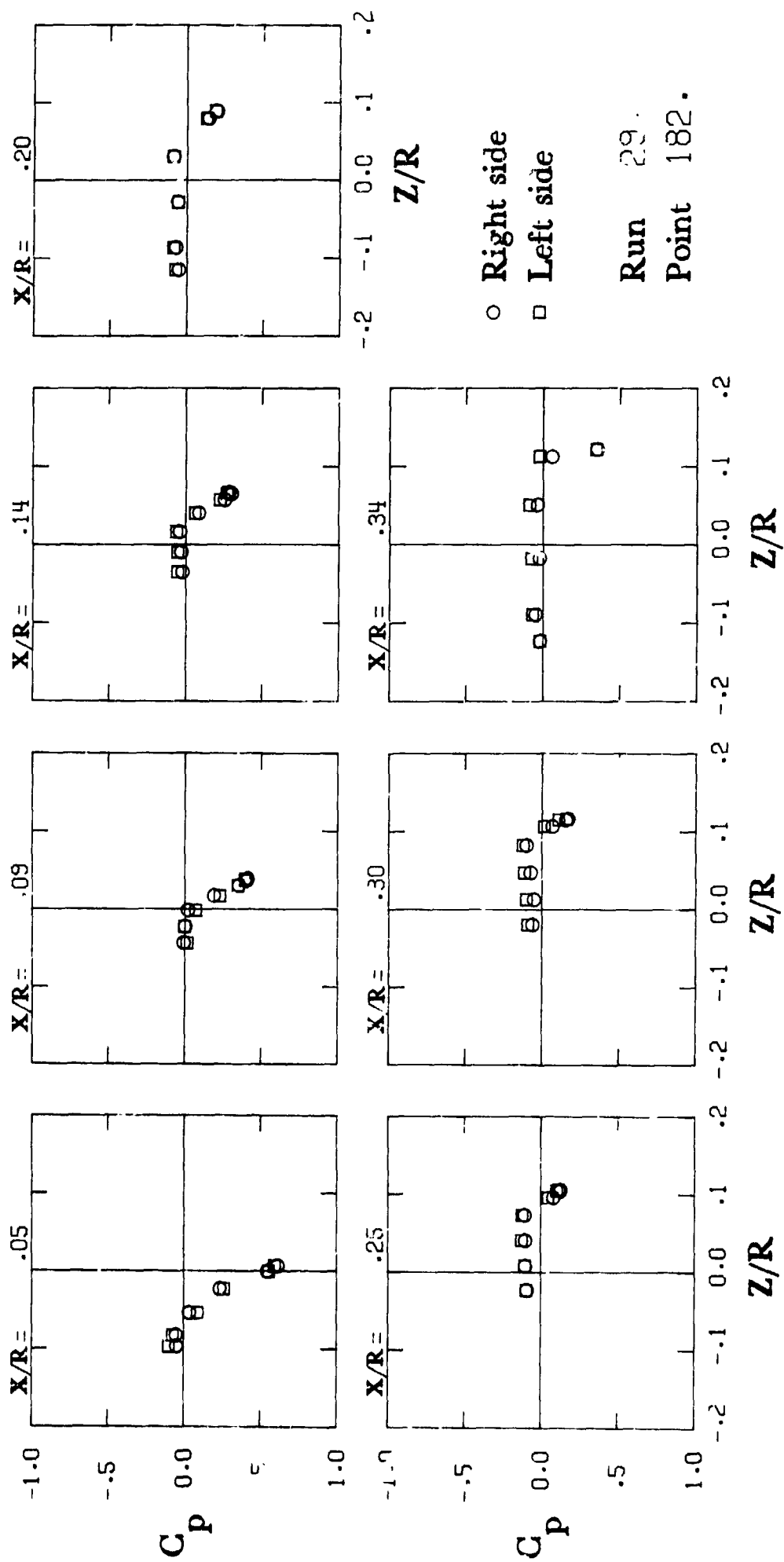


Figure 4. Continued.

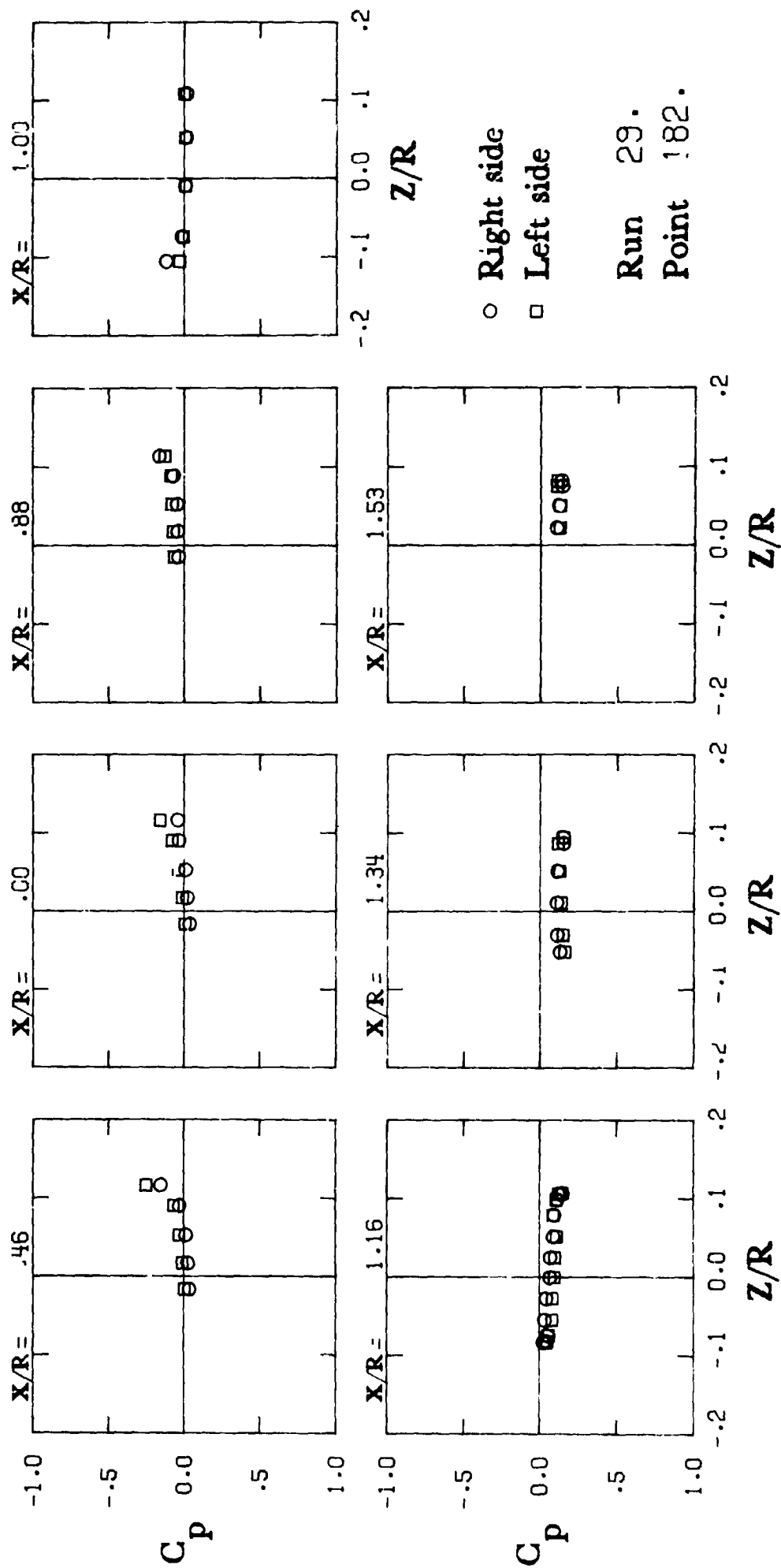


Figure 4. Continued.

APPENDIX

The pressure data, presented graphically as figure 4, are presented in tabular form in this appendix. Orifices are referenced by orifice number. The coordinates may be found in table III and the test conditions in table IV. The pressure coefficient C_p is described in the "Symbols" section.

APPENDIX CONTINUED.

RUN=	10	POINT=	79	ORIFICE(CP)															
11	.705	21	.574	31	.046	41	-.309	51	-.474	61	-.365	71	.459	81	.443	91	.318	101	.046
111	-.229	121	-.250	131	-.264	141	.259	151	.270	161	.174	171	-.109	181	-.301	191	-.277	201	-.264
211	.120	221	.024	231	-.346	241	-.213	251	-.344	261	-.232	271	.014	281	.011	291	-.085	301	-.341
311	-.349	321	-.320	331	-.306	341	.031	351	.007	361	-.103	371	-.371	381	-.313	391	-.268	401	-.255
411	.225	421	-.137	431	-.266	441	-.229	451	-.260	461	-.153	471	-.321	481	-.260	491	-.158	501	-.145
511	-.135	521	-.166	531	-.216	541	-.145	551	-.127	561	-.114	571	-.171	581	-.219	591	-.192	601	-.179
611	-.177	621	-.098	631	-.131	641	-.125	651	-.110	661	-.173	671	.083	681	-.010	691	-.108	701	-.085
711	-.075	721	-.067	731	-.065	741	-.060	751	-.044	761	-.031	771	-.025	781	-.023	791	.086	801	-.142
811	-.052	821	-.023	831	.017	841	.033	851	.073	861	-.062	871	-.031	881	-.002	891	.689	901	.587
911	.028	921	-.239	931	-.501	941	-.430	951	.437	961	.435	971	.361	981	.120	991	-.181	1001	-.252
1011	-.260	1021	.259	1031	.251	1041	.165	1051	-.124	1061	-.294	1071	-.273	1081	-.284	1091	.123	1101	.039
1111	-.333	1121	-.257	1131	-.339	1141	-.250	1151	.015	1161	.620	1171	-.061	1181	-.323	1191	-.320	1201	-.284
1211	-.268	1221	.029	1231	-.003	1241	-.128	1251	-.356	1261	-.299	1271	-.279	1281	-.265	1291	.225	1301	-.131
1311	-.271	1321	-.245	1331	-.265	1341	-.148	1351	-.305	1361	-.234	1371	-.157	1381	-.134	1391	-.142	1401	-.168
1411	-.216	1421	-.148	1431	-.125	1441	-.108	1451	-.171	1461	-.211	1471	-.191	1481	-.188	1491	-.179	1501	-.086
1511	-.116	1521	-.111	1531	-.116	1541	-.160	1551	.089	1561	-.010	1571	-.065	1581	-.088	1591	-.075	1601	-.054
1611	-.045	1621	-.040	1631	-.012	1641	-.026	1651	-.031	1661	-.031	1671	.080	1681	-.095	1691	-.029	1701	-.015
1711	.013	1721	.036	1731	.050	1741	-.045	1751	-.008	1761	.017								

RUN=	10	POINT=	80	ORIFICE(CP)															
11	.587	21	.434	31	.106	41	-.141	51	-.261	61	-.242	71	.332	81	.316	91	.257	101	.074
111	-.138	121	-.165	131	-.154	141	.124	151	.159	161	.124	171	-.043	181	-.194	191	-.192	201	-.186
211	.010	221	-.038	231	-.274	241	-.223	251	-.239	261	-.194	271	-.088	281	-.093	291	-.133	301	-.277
311	-.293	321	-.271	331	-.255	341	-.035	351	-.064	361	-.122	371	-.278	381	-.255	391	-.229	401	-.226
411	.181	421	-.122	431	-.223	441	-.197	451	-.197	461	-.143	471	-.247	481	-.156	491	-.122	501	-.109
511	-.101	521	-.153	531	-.148	541	-.111	551	-.098	561	-.080	571	-.223	581	-.184	591	-.171	601	-.158
611	-.276	621	-.081	631	-.101	641	-.114	651	-.118	661	-.186	671	.044	681	-.006	691	-.058	701	-.060
711	-.047	721	-.049	731	-.047	741	-.060	751	-.049	761	-.045	771	-.051	781	-.056	791	.027	801	-.041
811	-.035	821	-.012	831	.009	841	.032	851	.013	861	-.029	871	.000	881	.000	891	.573	901	.513
911	.134	921	-.087	931	-.280	941	-.273	951	.315	961	.304	971	.247	981	.106	991	-.103	1001	-.179
1011	-.155	1021	.129	1031	.140	1041	.101	1051	-.093	1061	-.213	1071	-.202	1081	-.192	1091	.020	1101	-.009
1111	-.254	1121	-.200	1131	-.218	1141	-.202	1151	-.080	1161	-.077	1171	-.093	1181	-.260	1191	-.260	1201	-.241
1211	-.215	1221	-.072	1231	-.069	1241	-.137	1251	-.268	1261	-.253	1271	-.236	1281	-.228	1291	.192	1301	-.140
1311	-.222	1321	-.208	1331	-.188	1341	-.140	1351	-.242	1361	-.137	1371	-.114	1381	-.103	1391	-.100	1401	-.163
1411	-.134	1421	-.133	1431	-.089	1441	-.078	1451	-.194	1461	-.180	1471	-.174	1481	-.163	1491	-.302	1501	-.070
1511	-.088	1521	-.107	1531	-.106	1541	-.175	1551	.043	1561	.001	1571	-.033	1581	-.065	1591	-.029	1601	-.029
1611	-.031	1621	-.038	1631	-.031	1641	-.038	1651	-.047	1661	-.042	1671	.045	1681	-.024	1691	-.024	1701	.008
1711	.040	1721	.040	1731	.022	1741	.004	1751	.017	1761	.015								

APPENDIX CONTINUED.

PUN=	10	POINT=	R1	OFFICE(CP)															
11	.2431	21	.2751	31	.1501	41	.0541	51	.0621	61	-.0081	71	-.0101	81	.0141	91	.0161	101	-.0241
111	-.0821	121	-.0881	131	-.0851	141	-.1571	151	-.1301	161	-.0901	171	-.1091	181	-.1681	191	-.1681	201	-.1541
211	-.2371	221	-.2181	231	-.2341	241	-.2131	251	-.1381	261	-.1061	271	-.2881	281	-.2771	291	-.2561	301	-.2691
311	-.2721	321	-.2721	331	-.2641	341	-.1841	351	-.1981	361	-.2191	371	-.2371	381	-.2371	391	-.2371	401	-.2341
411	.0941	421	-.1711	431	.2051	441	.2051	451	-.2111	461	-.1271	471	-.1711	481	-.1271	491	-.1401	501	-.1401
511	-.1351	521	-.1401	531	-.1211	541	-.1191	551	-.1211	561	-.1111	571	-.2871	581	-.2391	591	-.2111	601	-.2081
611	-.2031	621	-.0981	631	-.1441	641	-.1651	651	-.2171	661	-.2841	671	-.0311	681	-.0481	691	-.0621	701	-.0561
711	-.0541	721	-.0581	731	-.0941	741	-.1191	751	-.1501	761	-.1861	771	-.2021	781	-.2081	791	-.0351	801	-.0521
811	-.0331	821	-.0211	831	-.0481	841	-.0651	851	-.0231	861	-.0331	871	-.0251	881	-.0231	891	.2331	901	.2701
911	.1331	921	.0731	931	.0571	941	-.0141	951	-.0291	961	.0071	971	.0151	981	.0021	991	-.0661	1001	-.1291
1011	-.0771	1021	-.1471	1031	-.1391	1041	-.1051	1051	-.1211	1061	-.1601	1071	-.1601	1081	-.1581	1091	-.2211	1101	-.1841
1111	-.1971	1121	-.1441	1131	-.1211	1141	-.1081	1151	-.2761	1161	-.2571	1171	-.2291	1181	-.2231	1191	-.2521	1201	-.2421
1211	-.2361	1221	-.1881	1231	-.2051	1241	-.2391	1251	-.2531	1261	-.2511	1271	-.2511	1281	-.2481	1291	.1111	1301	-.1821
1311	-.2251	1321	-.2311	1331	-.1961	1341	-.1191	1351	-.1651	1361	-.1171	1371	-.1281	1381	-.1281	1391	-.1221	1401	-.1621
1411	-.1341	1421	-.1221	1431	-.1171	1441	-.1111	1451	-.2851	1461	-.2421	1471	-.2251	1481	-.2191	1491	-.2141	1501	-.0881
1511	-.1481	1521	-.1601	1531	-.2151	1541	-.2891	1551	-.0241	1561	-.0381	1571	-.0541	1581	-.0401	1591	-.0521	1601	-.0401
1611	-.0911	1621	-.1111	1631	-.1481	1641	-.1811	1651	-.1991	1661	-.2061	1671	-.0241	1681	-.0421	1691	-.0191	1701	-.0191
1711	-.0471	1721	-.0611	1731	-.0171	1741	-.0221	1751	-.0151	1761	-.0151	1771	-.0151	1781	-.0421	1791	-.0191	1801	-.0191

RUN=	11	POINT=	R2	OFFICE(CP)															
11	.409	21	.374	31	.139	41	.050	51	.122	61	.149	71	.142	81	.134	91	.110	101	.011
111	.122	121	.125	131	.130	141	.034	151	.016	161	.005	171	.093	181	.200	191	.178	201	.154
211	.109	221	.130	231	.248	241	.224	251	.176	261	.146	271	.216	281	.202	291	.213	301	.272
311	.298	321	.285	331	.261	341	.150	351	.158	361	.192	371	.263	381	.260	391	.250	401	.242
411	.107	421	.171	431	.232	441	.224	451	.203	461	.169	471	.242	481	.158	491	.145	501	.127
511	.119	521	.153	531	.137	541	.116	551	.127	561	.108	571	.281	581	.224	591	.200	601	.184
611	.184	621	.113	631	.127	641	.146	651	.165	661	.250	671	.027	681	.046	691	.085	701	.090
711	.069	721	.071	731	.083	741	.096	751	.121	761	.142	771	.206	781	.252	791	.033	801	.050
811	.050	821	.015	831	.012	841	.021	851	.017	861	.025	871	.031	881	.027	891	.387	901	.377
911	.136	921	.016	931	.129	941	.168	951	.120	961	.117	971	.120	981	.044	991	.090	1001	.142
1011	.118	1021	.032	1031	.024	1041	.050	1051	.118	1061	.195	1071	.184	1081	.171	1091	.126	1101	.079
1111	.221	1121	.195	1131	.179	1141	.168	1151	.202	1161	.187	1171	.181	1181	.257	1191	.268	1201	.252
1211	.231	1221	.145	1231	.171	1241	.199	1251	.268	1261	.259	1271	.256	1281	.253	1291	.111	1301	.179
1311	.245	1321	.236	1331	.199	1341	.159	1351	.199	1361	.151	1371	.139	1381	.131	1391	.114	1401	.168
1411	.137	1421	.182	1431	.111	1441	.105	1451	.265	1461	.214	1471	.208	1481	.196	1491	.194	1501	.093
1511	.123	1521	.137	1531	.160	1541	.247	1551	.026	1561	.047	1571	.056	1581	.063	1591	.056	1601	.065
1611	.082	1621	.093	1631	.082	1641	.144	1651	.148	1661	.162	1671	.024	1681	.033	1691	.035	1701	.008
1711	.008	1721	.017	1731	.010	1741	.029	1751	.029	1761	.022								

APPENDIX CONTINUED.

RUN=	11	POINT=	R3	ORIFICE (CP)									
11	.371	21	.265	31	-.050	41	-.200	51	-.162	61	-.149	71	.131
11	-.298	12	-.269	13	-.248	14	-.042	15	-.058	16	-.109	17	-.248
21	-.149	22	-.221	23	-.362	24	-.296	25	-.213	26	-.186	27	-.237
31	-.373	32	-.346	33	-.330	34	-.161	35	-.184	36	-.266	37	-.365
41	.059	42	-.258	43	-.279	44	-.247	45	-.229	46	-.169	47	-.389
51	-.129	52	-.177	53	-.156	54	-.127	55	-.129	56	-.114	57	-.221
61	-.182	62	-.046	63	-.083	64	-.110	65	-.169	66	-.215	67	.006
71	-.033	72	-.037	73	-.048	74	-.071	75	-.135	76	-.156	77	-.167
81	-.035	82	-.002	83	.013	84	.002	85	-.021	86	-.021	87	-.015
91	.306	92	.152	93	-.079	94	-.195	95	.149	96	.159	97	.214
101	.031	102	-.021	103	-.011	104	.057	105	.031	106	-.048	107	-.069
111	-.092	112	-.113	113	-.142	114	-.215	115	-.210	116	-.181	117	-.126
121	-.163	122	-.137	123	-.125	124	-.148	125	-.165	126	-.179	127	-.177
131	-.162	132	-.174	133	-.168	134	-.162	135	-.085	136	-.077	137	-.088
141	-.111	142	-.097	143	-.088	144	-.082	145	-.336	146	-.242	147	-.211
151	-.144	152	-.151	153	-.167	154	-.234	155	-.054	156	-.063	157	-.056
161	-.095	162	-.109	163	-.135	164	-.146	165	-.160	166	-.169	167	-.056
171	-.042	172	-.038	173	-.047	174	-.052	175	-.038	176	-.022		

RUN=	11	POINT=	R4	ORIFICE (CP)									
11	.419	21	.377	31	.142	41	-.053	51	-.120	61	-.141	71	.150
11	-.125	12	-.128	13	-.122	14	-.032	15	-.002	16	-.005	17	-.098
21	-.130	22	-.134	23	-.269	24	-.237	25	-.192	26	-.176	27	-.210
31	-.298	32	-.290	33	-.269	34	-.140	35	-.153	36	-.187	37	-.260
41	.107	42	-.156	43	-.219	44	-.213	45	-.203	46	-.158	47	-.224
51	-.132	52	-.163	53	-.142	54	-.127	55	-.116	56	-.108	57	-.279
61	-.192	62	-.113	63	-.131	64	-.150	65	-.167	66	-.254	67	-.023
71	-.060	72	-.069	73	-.077	74	-.096	75	-.113	76	-.150	77	-.163
81	-.067	82	-.037	83	-.035	84	-.023	85	-.031	86	-.040	87	-.040
91	.125	92	.005	93	-.134	94	-.163	95	.123	96	.128	97	.133
101	-.118	102	-.024	103	-.016	104	-.021	105	-.105	106	-.189	107	-.208
111	-.226	112	-.213	113	-.184	114	-.181	115	-.202	116	-.202	117	-.192
121	-.242	122	-.134	123	-.162	124	-.199	125	-.259	126	-.256	127	-.253
131	-.228	132	-.228	133	-.194	134	-.151	135	-.214	136	-.139	137	-.134
141	-.148	142	-.128	143	-.111	144	-.108	145	-.273	146	-.225	147	-.211
151	-.125	152	-.139	153	-.158	154	-.254	155	-.022	156	-.042	157	-.049
161	-.077	162	-.084	163	-.100	164	-.144	165	-.155	166	-.151	167	-.022
171	-.026	172	-.017	173	-.033	174	-.031	175	-.033	176	-.019		

APPENDIX CONTINUED.

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APPENDIX CONTINUED.

RUN=	11	POINT=	R7	ORIFICE (CP)															
11	.334	21	.553	31	.633	41	.374	51	-.093	61	-.325	71	.075	81	.145	91	.281	101	-.403
111	.361	121	.313	131	.278	141	-.088	151	-.040	161	.126	171	.273	181	.254	191	.206	201	.161
21	-.208	221	-.056	231	.120	241	.072	251	-.146	261	-.301	271	-.253	281	-.245	291	-.154	301	-.005
31	.008	321	-.016	331	-.021	341	-.171	351	-.169	361	-.158	371	-.011	381	-.036	391	-.017	401	-.027
41	-.043	421	-.101	431	-.001	441	-.038	451	-.166	461	-.295	471	.136	481	.031	491	.028	501	.015
51	-.001	521	-.022	531	-.022	541	-.003	551	.002	561	-.001	571	-.496	581	-.300	591	-.182	601	-.166
61	-.145	621	-.288	631	-.161	641	-.146	651	-.194	661	-.263	671	-.123	681	-.119	691	-.158	701	-.179
71	-.125	721	-.110	731	-.110	741	-.133	751	-.221	761	-.269	771	-.240	781	-.236	791	-.117	801	-.127
81	-.081	821	-.075	831	-.173	841	-.098	851	-.073	861	-.083	871	-.046	881	-.033	891	.228	901	-.053
91	-.522	921	-.504	931	-.320	941	-.239	951	-.006	961	-.105	971	-.299	981	-.517	991	-.614	1001	-.546
101	-.457	1021	-.132	1031	-.213	1041	-.396	1051	-.617	1061	-.590	1071	-.509	1081	-.428	1091	-.236	1101	-.485
111	-.575	1121	-.368	1131	-.320	1141	-.260	1151	-.286	1161	-.354	1171	-.541	1181	-.624	1191	-.433	1201	-.383
121	-.352	1221	-.242	1231	-.356	1241	-.570	1251	-.567	1261	-.398	1271	-.342	1281	-.319	1291	-.094	1301	-.590
131	-.333	1321	-.279	1331	-.308	1341	-.239	1351	-.596	1361	-.313	1371	-.188	1381	-.142	1391	-.134	1401	-.234
141	-.225	1421	-.134	1431	-.111	1441	-.105	1451	-.299	1461	-.231	1471	-.214	1481	-.211	1491	-.196	1501	-.135
151	-.116	1521	-.151	1531	-.314	1541	-.353	1551	-.118	1561	-.137	1571	-.128	1581	-.116	1591	-.088	1601	-.077
161	-.079	1621	-.123	1631	-.155	1641	-.217	1651	-.236	1661	-.240	1671	-.100	1681	-.111	1691	-.082	1701	-.045
171	-.003	1721	-.006	1731	-.079	1741	-.075	1751	-.063	1761	-.040								

RUN=	12	POINT=	RR	ORIFICE (CP)															
11	.718	21	.567	31	.055	41	-.290	51	-.476	61	-.371	71	.474	81	.452	91	.337	101	.074
111	-.237	121	-.256	131	-.268	141	-.279	151	-.281	161	.184	171	-.098	181	-.303	191	-.266	201	-.264
21	.129	221	.038	231	-.338	241	-.279	251	-.343	261	-.225	271	.023	281	.021	291	-.078	301	-.363
31	-.356	321	-.318	331	-.294	341	.061	351	.026	361	-.087	371	-.368	381	-.303	391	-.260	401	-.245
41	.247	421	-.122	431	-.257	441	-.209	451	-.256	461	-.141	471	-.369	481	-.251	491	-.161	501	-.139
51	-.133	521	-.152	531	-.213	541	-.141	551	-.121	561	-.101	571	-.146	581	-.211	591	-.180	601	-.166
61	-.164	621	-.096	631	-.114	641	-.111	651	-.096	661	-.172	671	.101	681	-.001	691	-.108	701	-.070
71	-.066	721	-.062	731	-.054	741	-.055	751	-.021	761	-.010	771	-.013	781	-.006	791	.096	801	-.120
81	-.041	821	-.013	831	.025	841	.040	851	.089	861	-.047	871	-.023	881	.019	891	.713	901	.609
91	.041	921	-.241	931	-.501	941	-.436	951	.464	961	.446	971	.348	981	.115	991	-.179	1001	-.251
101	-.259	1021	.283	1031	.269	1041	.190	1051	-.119	1061	-.287	1071	-.264	1081	-.275	1091	.136	1101	.050
111	-.292	1121	-.242	1131	-.335	1141	-.244	1151	.036	1161	-.040	1171	-.050	1181	-.322	1191	-.320	1201	-.279
121	-.263	1221	.063	1231	.020	1241	-.100	1251	-.346	1261	-.290	1271	-.261	1281	-.252	1291	.256	1301	-.134
131	-.259	1321	-.234	1331	-.255	1341	-.138	1351	-.305	1361	-.216	1371	-.157	1381	-.129	1391	-.131	1401	-.156
141	-.200	1421	-.140	1431	-.113	1441	-.099	1451	-.143	1461	-.197	1471	-.183	1481	-.172	1491	-.166	1501	-.060
151	-.101	1521	-.094	1531	-.092	1541	-.144	1551	.094	1561	-.005	1571	-.064	1581	-.068	1591	-.054	1601	-.039
161	-.033	1621	-.027	1631	.003	1641	-.006	1651	-.014	1661	-.014	1671	.093	1681	-.103	1691	-.023	1701	.006
171	.042	1721	.035	1731	.064	1741	-.054	1751	.004	1761	.032								

APPENDIX CONTINUED:

[illegible]

RUN=	12	POINT=	90	OFFICE(CP)	5(	-066)	6(	-099)	7(	.192)	8(	.184)	9(	.160)	10(	.063)
11	.448	21	.418	31	.192	4(	-.005)	5(	-.066)	6(	-.099)	7(	.192)	8(	.184)	.063
111	-.074	121	-.082	131	-.078	14(	.010)	15(	.041)	16(	.050)	17(	-.043)	18(	-.141)	-.126
211	-.096	221	-.089	231	-.213	24(	-.181)	25(	-.139)	26(	-.124)	27(	-.167)	28(	-.163	-.235
311	-.249	321	-.241	331	-.226	34(	-.082)	35(	-.100)	36(	-.133)	37(	-.209)	38(	-.196	-.194
411	.173	421	-.117	431	-.171	44(	-.168)	45(	-.150)	46(	-.113)	47(	-.198)	48(	-.073	-.084
511	-.069	521	-.112	531	-.097	54(	-.075)	55(	-.075)	56(	-.059)	57(	-.211)	58(	-.160	-.143
611	-.141	621	-.062	631	-.074	64(	-.090)	65(	-.115)	66(	-.201)	67(	.022)	68(	-.003	-.023
711	-.008	721	-.015	731	-.027	74(	-.043)	75(	-.059)	76(	-.087)	77(	-.099)	78(	.016)	-.025
811	-.014	821	.020	831	.024	84(	.028)	85(	.026)	86(	.007)	87(	.013)	88(	.018)	.432
911	.170	921	.048	931	-.080	94(	-.116)	95(	.172)	96(	.170)	97(	.166)	98(	.098)	-.087
1011	-.080	1021	.018	1031	.032	104(	.028)	105(	-.064)	106(	-.146)	107(	-.139)	108(	-.134)	-.063
1111	-.183	1121	-.154	1131	-.131	114(	-.132)	115(	-.156)	116(	-.140)	117(	-.137)	118(	-.194)	-.201
1211	-.190	1221	-.077	1231	-.104	124(	-.147)	125(	-.202)	126(	-.205)	127(	-.198)	128(	-.198)	-.123
1311	-.179	1321	-.140	1331	-.145	134(	-.103)	135(	-.193)	136(	-.077)	137(	-.067)	138(	-.062)	-.123
1411	-.104	1421	-.072	1431	-.066	144(	-.054)	145(	-.213)	146(	-.159)	147(	-.154)	148(	-.150)	-.042
1511	-.070	1521	-.085	1531	-.112	154(	-.196)	155(	.029)	156(	.008)	157(	-.010)	158(	-.004	-.007
1611	-.021	1621	-.036	1631	-.050	164(	-.091)	165(	-.099)	166(	-.100)	167(	.022)	168(	-.005)	.033
1711	.024	1721	.026	1731	.023	174(	.017)	175(	.020)	176(	.023)					

APPENDIX CONTINUED.

RUN= 13 POINT= 93 ORIFICE(CP)

11	.461	21	.511	31	.379	41		51	61	71	.206	81	.231	91	.262	101	.221
11	.120	12	.081	13	.057	14		15	.068	.130	.107	18	.011	19	-.010	20	-.015
21	-.083	22	-.023	23	-.081	24		25	-.105	-.143	-.153	28	-.150	29	-.099	30	-.117
31	-.146	32	-.152	33	-.146	34		35	-.086	-.090	-.114	38	-.136	39	-.128	40	-.129
41	.153	42	-.054	43	-.103	44		45	-.120	-.116	-.029	48	-.032	49	-.039	50	-.046
51	-.047	52	-.074	53	-.058	54		55	-.053	-.036	-.289	58	-.188	59	-.150	60	-.143
61	-.140	62	-.065	63	-.093	64		65	-.116	-.225	-.005	68	-.019	69	-.025	70	-.014
71	-.021	72	-.039	73	-.049	74		75	-.090	-.094	-.101	78	-.093	79	-.004	80	-.021
81	.006	82	.008	83	-.005	84		85	.017	-.004	.008	88	.027	89	.411	90	.326
91	-.041	92	-.104	93	-.136	94		95	.164	.131	.069	98	-.050	99	-.214	100	-.228
101	-.193	102	.015	103	-.006	104		105	-.222	-.286	-.253	108	-.228	109	-.093	110	-.156
111	-.275	112	-.219	113	-.169	114		115	-.163	-.179	-.215	118	-.325	119	-.299	120	-.261
121	-.238	122	-.101	123	-.144	124		125	-.293	-.263	-.243	128	-.229	129	.133	130	-.216
131	-.217	132	-.200	133	-.170	134		135	-.379	-.133	-.097	138	-.085	139	-.078	140	-.145
141	-.110	142	-.074	143	-.066	144		145	-.143	-.122	-.122	148	-.123	149	-.117	150	-.033
151	-.043	152	-.045	153	-.136	154		155	.019	.027	.001	158	-.016	159	.002	160	.007
161	.003	162	-.013	163	-.061	164		165	-.078	-.069	.010	168	.004	169	.005	170	.033
171	.053	172	.062	173	.017	174		175	.030	.028							

RUN= 13 POINT= 94 ORIFICE(CP)

11	.459	21	.422	31	.188	41		51	-.071	61	.193	71	.199	81	.169	91	.068
11	-.062	12	-.077	13	-.071	14		15	.046	.053	-.041	17	-.140	18	-.139	19	-.124
21	-.083	22	-.087	23	-.209	24		25	-.129	-.119	-.165	27	-.152	28	-.155	29	-.228
31	-.243	32	-.235	33	-.214	34		35	-.099	-.133	-.202	37	-.207	38	-.193	39	-.186
41	.172	42	-.110	43	-.168	44		45	-.144	-.106	-.193	47	-.087	48	-.071	49	-.082
51	-.063	52	-.104	53	-.092	54		55	-.069	-.051	-.211	57	-.157	58	-.137	59	-.135
61	-.131	62	-.061	63	-.074	64		65	-.112	-.204	.032	67	.002	68	-.033	69	-.027
71	-.004	72	-.011	73	-.020	74		75	-.052	-.083	-.092	77	-.089	78	.022	80	-.013
81	-.013	82	.024	83	.034	84		85	.034	.010	.021	87	.027	88	.442	90	.440
91	.174	92	.038	93	-.083	94		95	.174	.193	.173	97	.103	98	-.031	100	-.076
101	-.071	102	.032	103	.035	104		105	-.057	-.134	-.136	107	-.133	108	-.075	110	-.061
111	-.172	112	-.144	113	-.120	114		115	-.152	-.132	-.128	117	-.193	118	-.212	120	-.192
121	-.179	122	-.077	123	-.108	124		125	-.206	-.204	-.199	127	-.191	128	.193	130	-.118
131	-.177	132	-.176	133	-.138	134		135	-.183	-.072	-.062	137	-.060	138	-.060	140	-.117
141	-.088	142	-.064	143	-.059	144		145	-.206	-.152	-.149	147	-.142	148	-.060	150	-.046
151	-.072	152	-.079	153	-.113	154		155	.034	.022	-.007	157	-.004	158	.008	160	-.003
161	-.014	162	-.031	163	-.043	164		165	-.085	-.087	.030	167	-.000	168	.016	170	.034
171	.029	172	.026	173	.029	174		175	.027	.035							

RUN= 15 POINT= 95 OFFICE(CP)

11	.461	21	.522	31	.381	41	.146	51	-.047	61	-.138	71	.202	81	.227	91	-.267	101	.226
11	-.108	12	.072	13	.055	14	.023	15	.070	16	.128	17	.104	18	.013	19	-.014	20	-.020
21	-.091	22	-.028	23	-.086	24	-.087	25	-.114	26	-.150	27	-.155	28	-.136	29	-.099	30	-.118
31	-.152	32	-.152	33	-.150	34	-.091	35	-.089	36	-.093	37	-.113	38	-.135	39	-.135	40	-.133
41	.149	42	-.055	43	-.107	44	-.118	45	-.126	46	-.121	47	-.038	48	-.032	49	-.042	50	-.047
51	-.050	52	-.079	53	-.062	54	-.050	55	-.052	56	-.035	57	-.289	58	-.191	59	-.150	60	-.145
61	-.137	62	-.061	63	-.093	64	-.105	65	-.117	66	-.228	67	-.007	68	-.019	69	-.029	70	-.024
71	-.025	72	-.041	73	-.053	74	-.071	75	-.093	76	-.098	77	-.106	78	-.100	79	-.008	80	-.025
81	.003	82	.005	83	-.006	84	.027	85	.013	86	.006	87	.004	88	.020	89	.409	90	.313
91	-.045	92	-.128	93	-.138	94	-.124	95	.161	96	.128	97	.067	98	-.069	99	-.214	100	-.229
101	-.202	102	.011	103	-.007	104	-.072	105	-.224	106	-.283	107	-.249	108	-.234	109	-.098	110	-.155
111	-.286	112	-.225	113	-.168	114	-.155	115	-.162	116	-.166	117	-.213	118	-.324	119	-.299	120	-.263
121	-.240	122	-.102	123	-.151	124	-.234	125	-.303	126	-.264	127	-.248	128	-.237	129	.133	130	-.219
131	-.225	132	-.203	133	-.169	134	-.107	135	-.382	136	-.134	137	-.099	138	-.044	139	-.079	140	-.152
141	-.115	142	-.077	143	-.067	144	-.059	145	-.142	146	-.125	147	-.123	148	-.123	149	-.121	150	-.031
151	-.040	152	-.063	153	-.133	154	-.212	155	-.014	156	.020	157	-.003	158	-.036	159	.004	160	.008
161	.003	162	-.014	163	-.054	164	-.075	165	-.070	166	-.071	167	.009	168	.014	169	.011	170	.024
171	.054	172	.059	173	.016	174	.023	175	.029	176	.034								

[illegible]

ORIGINAL PAGE 15
OF POOR QUALITY

APPENDIX CONTINUED.

RUN=	15	POINT=	121	ORIFICE (CP)															
11	1.789	21	.652	31	-3.224	41	-3.180	51	-1.344	61	-1.708	71	2.459	81	2.415	91	.929	101	-.732
111	-3.209	121	-3.763	131	-3.734	141	3.129	151	2.852	161	2.036	171	-1.198	181	-2.364	191	-1.723	201	-2.131
21	2.969	221	1.118	231	-1.592	241	-1.898	251	-3.253	261	-.747	271	3.085	281	2.823	291	1.395	301	-3.020
31	-1.752	321	-.907	331	-.965	341	2.778	351	2.405	361	.071	371	-3.338	381	-1.118	391	-.731	401	-.817
41	2.591	421	.916	431	-.703	441	-.574	451	-2.493	461	-.545	471	.142	481	-.960	491	-.516	501	-.115
51	-.230	521	-.015	531	-.459	541	-.158	551	-.056	561	-.072	571	-.144	581	-1.891	591	-.717	601	-.459
61	-.402	621	-.686	631	-1.392	641	-.561	651	-.527	661	-.128	671	3.026	681	2.765	691	.601	701	-3.089
71	-1.688	721	-.948	731	-.857	741	-1.483	751	-.128	761	-.048	771	-.424	781	-.128	791	3.448	801	.031
81	-2.998	821	-2.098	831	-1.028	841	-.891	851	2.480	861	-.071	871	-3.282	881	-2.166	891	1.703	901	-.187
91	-3.265	921	-3.308	931	-1.161	941	-1.533	951	2.175	961	2.118	971	-.144	981	-2.721	991	-3.265	1001	-3.552
101	-3.308	1021	3.035	1031	1.946	1041	-.173	1051	-2.764	1061	-3.337	1071	-2.349	1081	-2.277	1091	3.077	1101	.858
111	-2.707	1121	-1.705	1131	-.243	1141	-.559	1151	3.006	1161	2.490	1171	.386	1181	-2.664	1191	-1.934	1201	-1.203
121	-1.146	1221	2.757	1231	2.383	1241	1.418	1251	-1.416	1261	-1.229	1271	-.980	1281	-.902	1291	2.461	1301	.748
131	-.995	1321	-.591	1331	-.310	1341	-.373	1351	.110	1361	-1.011	1371	-.432	1381	-.342	1391	-.295	1401	.453
141	.297	1421	.328	1431	.126	1441	.079	1451	1.278	1461	.017	1471	.157	1481	.110	1491	-.015	1501	1.025
151	-1.026	1521	-.472	1531	-.000	1541	-.045	1551	2.999	1561	2.660	1571	-.057	1581	-4.032	1591	-2.221	1601	-1.491
161	-1.063	1621	-1.240	1631	-.611	1641	-.057	1651	-.133	1661	-.258	1671	3.452	1681	-.057	1691	-4.045	1701	-2.133
171	-.434	1721	-.460	1731	2.484	1741	-.648	1751	-2.485	1761	-.213								

RUN=	15	POINT=	122	ORIFICE (CP)																
11	1.350	21	1.149	31	.466	41	.313	51	.750	61	.575	71	1.505	81	1.465	91	1.200	101	.949	
111	.470	121	.456	131	.416	141	1.521	151	1.479	161	1.264	171	.754	181	.547	191	.549	201	.440	
211	1.554	221	1.260	231	.717	241	.691	251	.880	261	.886	271	1.525	281	1.535	291	1.258	301	.575	
311	.705	321	.756	331	.699	341	1.514	351	1.465	361	1.169	371	.632	381	.849	391	.806	401	.784	
411	1.459	421	.997	431	.759	441	.849	451	.757	461	.950	471	1.058	481	.628	491	.843	501	.915	
511	.894	521	.970	531	.966	541	.952	551	.978	561	.968	571	.993	581	.635	591	.841	601	.966	
611	.945	621	.737	631	.779	641	.808	651	.967	661	.976	671	1.487	681	1.381	691	.835	701	-.039	
711	.542	721	.631	731	.630	741	.654	751	.925	761	.914	771	.913	781	.914	791	1.656	801	1.157	
811	.295	821	.594	831	.897	841	.916	851	1.510	861	.917	871	.326	881	.388	891	1.308	901	.954	
911	.198	921	.319	931	.767	941	.612	951	1.463	961	1.295	971	1.021	981	.420	991	.182	1001	.254	
1011	.358	1021	1.496	1031	1.455	1041	1.011	1051	.428	1061	.287	1071	.495	1081	.501	1091	1.537	1101	1.074	
1111	.409	1121	.653	1131	.225	1141	.896	1151	1.519	1161	1.476	1171	.993	1181	.366	1191	.546	1201	.727	
1211	.741	1221	1.501	1231	1.427	1241	.935	1251	.470	1261	.682	1271	.812	1281	.778	1291	1.452	1301	1.091	
1311	.740	1321	.820	1331	.803	1341	.963	1351	.986	1361	.869	1371	.848	1381	.950	1391	.937	1401	1.069	
1411	1.040	1421	1.050	1431	1.031	1441	.993	1451	1.088	1461	.995	1471	1.014	1481	1.047	1491	.997	1501	1.121	
1511	.819	1521	.908	1531	.764	1541	.982	1551	1.537	1561	1.554	1571	1.226	1581	.677	1591	.663	1601	.786	
1611	.749	1621	.702	1631	.926	1641	.979	1651	.946	1661	.939	1671	1.559	1681	.695	1691	.299	1701	.558	
1711	.793	1721	.912	1731	1.493	1741	.841	1751	.005	1761	.366									

APPENDIX CONTINUED.

RUN=	15	POINT=	123	ORIFICE (CP)									
11	1.426	2	1.197	3	-.023	4	-.598	5	.416	6	.598	7	1.685
11	.149	12	.203	13	.205	14	1.780	15	1.685	16	1.29	17	.677
21	1.762	22	1.312	23	.400	24	.521	25	.752	26	.839	27	1.691
31	.602	32	.758	33	.665	34	1.617	35	1.574	36	1.277	37	.356
41	1.528	42	1.256	43	.848	44	.840	45	.762	46	.957	47	1.102
51	.904	52	.924	53	.863	54	.951	55	.980	56	.990	57	.914
61	.935	62	.448	63	.612	64	.765	65	.912	66	.930	67	1.726
71	.374	72	.504	73	.618	74	.637	75	.753	76	.918	77	.964
81	.025	82	.437	83	.827	84	.817	85	1.877	86	.783	87	.014
91	-.263	92	-.467	93	.576	94	.613	95	1.625	96	1.547	97	1.161
101	.201	102	1.772	103	1.627	104	1.186	105	.389	106	.038	107	.337
111	.166	112	.527	113	.824	114	.842	115	1.593	116	1.603	117	1.211
121	.638	122	1.614	123	1.489	124	1.016	125	.387	126	.665	127	.752
131	.661	132	.773	133	.684	134	.963	135	.923	136	.524	137	.927
141	.978	142	1.065	143	1.027	144	1.012	145	1.244	146	1.022	147	.984
151	.899	152	.890	153	.651	154	.964	155	1.696	156	1.580	157	1.411
161	.713	162	.633	163	.890	164	.947	165	.959	166	.960	167	1.866
171	.858	172	.853	173	1.846	174	.856	175	-.427	176	.095		

RUN=	15	POINT=	124	ORIFICE (CP)									
11	4.944	2	1.447	3	5.897	4	12.775	5	10.225	6	5.037	7	6.794
11	7.952	12	8.068	13	7.733	14	7.552	15	6.663	16	3.501	17	3.449
21	7.304	22	3.516	23	4.061	24	3.755	25	7.267	26	6.859	27	6.867
31	4.119	32	2.036	33	3.464	34	5.955	35	5.382	36	2.188	37	4.486
41	5.253	42	1.114	43	1.478	44	1.120	45	2.882	46	6.76	47	.613
51	5.547	52	.255	53	5.33	54	1.54	55	.427	56	3.98	57	1.89
61	6.76	62	4.906	63	2.89	64	1.262	65	2.282	66	2.021	67	6.471
71	3.277	72	2.480	73	2.879	74	2.230	75	1.911	76	6.13	77	.164
81	9.917	82	5.350	83	2.139	84	9.20	85	9.443	86	.059	87	11.568
91	9.452	92	11.987	93	9.667	94	4.413	95	6.311	96	3.934	97	.441
101	8.193	102	7.213	103	5.352	104	.484	105	6.403	106	8.593	107	5.701
111	6.990	112	3.826	113	2.537	114	6.689	115	6.612	116	5.180	117	1.515
121	3.683	122	5.613	123	4.545	124	.739	125	5.971	126	2.640	127	1.768
131	2.313	132	1.363	133	1.005	134	5.53	135	.568	136	2.982	137	9.958
141	7.787	142	.537	143	.615	144	.755	145	2.358	146	1.128	147	.552
151	1.287	152	1.192	153	1.148	154	.337	155	6.639	156	5.683	157	1.154
161	2.519	162	3.034	163	1.122	164	3.17	165	.173	166	3.30	167	7.758
171	1.349	172	8.921	173	8.976	174	5.802	175	13.210	176	8.808		

8	1.573	9	1.177	10	.748
18	.315	19	.462	20	.390
28	1.616	29	1.211	30	.426
38	.700	39	.788	40	.751
48	.784	49	.885	50	.896
58	.506	59	.778	60	.892
68	1.457	69	.521	70	.090
78	.915	79	1.894	80	1.026
88	.065	89	1.337	90	.813
98	.378	99	.016	100	.073
108	.362	109	1.716	110	1.069
118	.296	119	.455	120	.673
128	.716	129	1.474	130	.894
138	.923	139	.915	140	1.162
148	1.014	149	.984	150	1.266
158	.228	159	.578	160	.701
168	.889	169	.129	170	.421

8	6.488	9	3.122	10	-2.662
18	-5.329	19	-6.422	20	-6.232
28	6.386	29	3.283	30	-4.280
38	-1.679	39	-2.180	40	-2.739
48	-1.435	49	7.748	50	-5.562
58	9.948	59	7.791	60	3.304
68	3.043	69	1.080	70	11.807
78	3.17	79	8.634	80	4.99
88	-8.482	89	4.106	90	1.132
98	-5.372	99	9.123	100	9.925
108	-6.331	109	7.113	110	.670
118	7.004	119	4.513	120	3.325
128	-2.188	129	5.208	130	1.362
138	.163	139	2.242	140	1.564
148	.739	149	.054	150	3.230
158	-3.449	159	5.034	160	-2.883
168	.035	169	-8.116	170	-5.613

APPENDIX CONTINUED.

RUN= 15 POINT= 125 ORIFICE (CP)

11	2.998	21	1.807	31	-2.099	41	-6.900	51	-6.286	61	-1.298	71	3.575	81	3.502	91	1.989	101	.007
111	-3.342	121	-3.067	131	-3.353	141	-3.991	151	3.752	161	2.249	171	-1.470	181	-1.584	191	-2.079	201	-1.766
211	4.007	221	2.654	231	-1.418	241	-1.096	251	-1.579	261	-1.127	271	3.492	281	3.414	291	2.035	301	-.934
311	-.534	321	-.549	331	-.326	341	3.265	351	3.076	361	1.639	371	-1.888	381	-.160	391	.162	401	.024
411	2.999	421	1.363	431	-.017	441	.484	451	-.042	461	-.216	471	.791	481	.177	491	.494	501	.632
511	.540	521	.944	531	.658	541	.893	551	.873	561	.949	571	.704	581	-.809	591	.321	601	.638
611	.607	621	-1.694	631	-.873	641	.261	651	.858	661	.822	671	3.752	681	2.708	691	.326	701	-4.564
711	-.516	721	-.463	731	-.577	741	.147	751	.757	761	.866	771	.785	781	.777	791	4.874	801	-.121
811	-4.243	821	-.995	831	.139	841	-.285	851	4.809	861	-.060	871	-4.751	881	-3.068	891	2.881	901	-.165
911	-4.739	921	-5.515	931	-4.601	941	-1.028	951	3.459	961	2.815	971	1.190	981	-2.188	991	-3.573	1001	-3.768
1011	-3.420	1021	3.719	1031	3.091	1041	1.261	1051	-1.943	1061	-3.057	1071	-2.357	1081	-1.846	1091	3.862	1101	.965
1111	-1.948	1121	-1.171	1131	-.880	1141	-.471	1151	3.310	1161	3.326	1171	.622	1181	-1.407	1191	-1.509	1201	-.354
1211	-.471	1221	3.218	1231	2.757	1241	1.245	1251	-1.495	1261	-.561	1271	-.028	1281	.006	1291	2.907	1301	1.384
1311	.000	1321	.028	1331	.011	1341	.354	1351	1.145	1361	.011	1371	.411	1381	.717	1391	.595	1401	1.417
1411	1.151	1421	1.151	1431	1.262	1441	1.012	1451	1.251	1461	.762	1471	1.028	1481	1.012	1491	1.017	1501	2.298
1511	.278	1521	.614	1531	.044	1541	.834	1551	3.789	1561	3.798	1571	1.256	1581	-1.173	1591	-.409	1601	-.396
1611	-.068	1621	-.486	1631	.040	1641	.879	1651	.870	1661	.682	1671	4.808	1681	1.746	1691	-1.738	1701	-1.078
1711	.017	1721	.327	1731	4.669	1741	.049	1751	-4.966	1761	-3.319								

RUN= 15 POINT= 126 ORIFICE (CP)

11	1.496	21	1.155	31	.066	41	.005	51	.554	61	.552	71	1.646	81	1.548	91	1.311	101	.727
111	.179	121	.173	131	.234	141	1.719	151	1.680	161	1.447	171	.607	181	.248	191	.358	201	.431
211	1.719	221	1.344	231	.524	241	.506	251	.473	261	.544	271	1.658	281	1.638	291	1.256	301	.307
311	.526	321	.656	331	.725	341	1.600	351	1.560	361	1.220	371	.456	381	.679	391	.724	401	.786
411	1.542	421	1.121	431	.800	441	.854	451	.759	461	.955	471	.865	481	.519	491	.846	501	.416
511	.924	521	.976	531	.867	541	.943	551	.947	561	1.017	571	.854	581	.722	591	.914	601	.951
611	.902	621	.702	631	.550	641	.755	651	.953	661	.964	671	1.653	681	1.643	691	1.279	701	.403
711	.278	721	.459	731	.631	741	.568	751	.804	761	.949	771	.946	781	.972	791	1.863	801	1.146
811	.019	821	.414	831	.789	841	.765	851	1.857	861	.938	871	-.209	881	.172	891	1.449	901	.930
911	-.352	921	.009	931	.639	941	.625	951	1.641	961	1.534	971	1.025	981	.430	991	.114	1001	.040
1011	.187	1021	1.693	1031	1.494	1041	.949	1051	.249	1061	.088	1071	.362	1081	.395	1091	1.701	1101	1.046
1111	.203	1121	.536	1131	.761	1141	.672	1151	1.641	1161	1.616	1171	1.001	1181	.253	1191	.445	1201	.658
1211	.693	1221	1.604	1231	1.518	1241	1.016	1251	.219	1261	.653	1271	.738	1281	.936	1291	1.547	1301	1.195
1311	.664	1321	.822	1331	.708	1341	.951	1351	1.092	1361	.742	1371	.854	1381	.930	1391	.917	1401	1.115
1411	1.016	1421	1.050	1431	1.075	1441	1.010	1451	1.223	1461	1.092	1471	.092	1481	1.003	1491	.999	1501	1.190
1511	.839	1521	.863	1531	.766	1541	.579	1551	1.693	1561	1.439	1571	.717	1581	.227	1591	.565	1601	.676
1611	.645	1621	.564	1631	.884	1641	.959	1651	.950	1661	.957	1671	1.776	1681	.419	1691	.012	1701	.373
1711	.862	1721	.833	1731	1.808	1741	.630	1751	-.351	1761	.158								

APPENDIX CONTINUED.

RUN=	16	POINT=	127	ORIFICE (CP)															
111	1.775	2	1.326	3	-.266	4	-.481	5	.496	6	.479	7	2.007	8	1.859	9	1.421	10	.708
111	-.005	12	-.342	13	-.147	14	2.111	15	1.932	16	1.285	17	.079	18	-.182	19	.203	20	.073
211	2.074	22	1.566	23	.430	24	.319	25	.708	26	.061	27	1.972	28	1.946	29	1.360	30	.227
311	.218	32	.441	33	.485	34	1.950	35	1.873	36	1.388	37	.263	38	.707	39	.684	40	.636
411	1.813	42	1.321	43	.616	44	.722	45	.268	46	.912	47	1.084	48	.536	49	.838	50	.841
511	.847	52	.969	53	.881	54	.870	55	.987	56	.964	57	.895	58	.223	59	.684	60	.847
611	.781	62	.305	63	.452	64	.815	65	.790	66	.869	67	1.808	68	1.656	69	.212	70	-.665
711	-.023	72	.441	73	.518	74	.645	75	.559	76	.869	77	.892	78	.946	79	2.268	80	1.536
811	-.031	82	.169	83	.767	84	.788	85	2.152	86	.974	87	-.588	88	-.266	89	1.687	90	.650
911	-.372	92	-.355	93	.579	94	.545	95	1.975	96	1.690	97	1.163	98	.041	99	-.706	100	-.418
1011	-.202	102	2.081	103	1.427	104	1.215	105	-.116	106	-.372	107	-.002	108	.021	109	2.078	110	1.035
1111	-.076	112	.289	113	.807	114	.024	115	1.901	116	1.870	117	1.166	118	-.179	119	.252	120	.519
1211	.585	122	1.921	123	1.859	124	1.035	125	.446	126	.474	127	.623	128	.641	129	1.775	130	.930
1311	.511	132	.694	133	.849	134	.926	135	1.081	136	.434	137	.803	138	.868	139	.874	140	1.119
1411	.942	142	1.103	143	1.029	144	.995	145	1.298	146	1.029	147	1.081	148	.979	149	.920	150	1.371
1511	.804	152	.773	153	.650	154	.926	155	1.902	156	1.947	157	1.654	158	.200	159	.370	160	.648
1611	.615	162	.328	163	.613	164	.906	165	.866	166	.943	167	2.240	168	.210	169	-.949	170	.125
1711	.710	172	.709	173	2.135	174	.353	175	-1.202	176	-.366								

RUN=	16	POINT=	128	ORIFICE (CP)															
11	2.267	21	1.595	31	-.953	41	-2.585	51	-3.873	61	-.004	71	2.922	81	2.676	91	1.617	101	-.009
111	-1.614	121	-1.275	131	-1.488	141	3.074	151	3.014	161	2.005	171	-.118	181	-.910	191	-.359	201	-.686
211	1.129	221	2.267	231	-.468	241	-.184	251	.242	261	.624	271	2.812	281	2.796	291	1.508	301	-.844
311	-.047	321	-.037	331	.144	341	2.717	351	2.615	361	1.725	371	-.325	381	.072	391	.384	401	.105
411	2.460	421	1.811	431	.325	441	.544	451	.239	461	.743	471	1.006	481	.539	491	.587	501	.593
511	.705	521	.925	531	.845	541	.915	551	.909	561	1.027	571	.400	581	-.625	591	.797	601	.947
611	.636	621	-.232	631	-.309	641	.454	651	.954	661	.881	671	2.591	681	2.583	691	-.045	701	-1.145
711	-.416	721	.019	731	.309	741	.079	751	.817	761	.877	771	.706	781	.826	791	3.479	801	2.071
811	-1.444	821	-.552	831	.429	841	.659	851	3.615	861	1.150	871	-2.250	881	-1.299	891	2.014	901	.121
911	-2.137	921	-2.260	931	-1.676	941	.100	951	2.899	961	2.491	971	1.306	981	-.405	991	-1.477	1001	-1.638
1011	-1.357	1021	3.038	1031	2.486	1041	1.247	1051	-.984	1061	-1.858	1071	-.968	1081	-.844	1091	3.081	1101	.759
1111	-.925	1121	-.308	1131	.491	1141	.663	1151	2.717	1161	2.577	1171	1.451	1181	-1.273	1191	-.748	1201	.057
1211	-.002	1221	2.715	1231	2.488	1241	.872	1251	-1.041	1261	.015	1271	.219	1281	.347	1291	2.377	1301	.598
1311	.091	1321	.505	1331	.336	1341	.773	1351	1.199	1361	.248	1371	.697	1381	.674	1391	.656	1401	1.205
1411	.648	1421	.995	1431	1.088	1441	1.035	1451	1.700	1461	.831	1471	1.100	1481	1.140	1491	.971	1501	1.834
1511	.609	1521	.755	1531	.167	1541	.873	1551	2.659	1561	2.701	1571	1.589	1581	-1.181	1591	-.305	1601	.068
1611	.327	1621	.006	1631	.515	1641	.793	1651	.685	1661	.817	1671	3.347	1681	-.206	1691	-1.308	1701	-.474
1711	.402	1721	.581	1731	3.314	1741	-.206	1751	-1.930	1761	-1.449								

APPENDIX CONTINUED.

RUN=	14	POINT=	129	ORIFICE (CP)															
11	3.481	21	1.306	31	-5.994	41	-7.203	51	-2.672	61	-2.395	71	4.993	81	3.302	91	2.209	101	-1.390
111	-5.834	121	-5.688	131	-5.018	141	5.065	151	5.561	161	1.466	171	-2.803	181	-5.207	191	-4.144	201	-3.765
211	5.517	221	3.113	231	-3.473	241	-2.759	251	-1.783	261	-1.011	271	5.590	281	5.430	291	1.423	301	-4.071
311	-2.147	321	-1.492	331	-1.594	341	4.569	351	4.283	361	2.334	371	-4.511	381	-2.105	391	-1.274	401	-1.231
411	4.082	421	2.120	431	-1.904	441	-1.045	451	-1.503	461	.058	471	.187	481	-1.718	491	-3.315	501	-4.011
511	-1.861	521	.187	531	-3.343	541	.244	551	.244	561	.330	571	-3.721	581	-3.151	591	-1.074	601	-6.731
611	-5.021	621	-3.440	631	-2.324	641	-1.378	651	.034	661	-.262	671	5.090	681	3.723	691	1.195	701	-5.979
711	-3.485	721	-2.084	731	-2.073	741	-2.210	751	-.103	761	-.422	771	-7.308	781	-.285	791	6.730	801	-.353
811	-5.842	821	-3.872	831	-2.255	841	-1.208	851	6.912	861	.284	871	-7.733	881	-5.068	891	3.537	901	-.629
911	-7.502	921	-6.729	931	-2.104	941	-1.899	951	4.496	961	4.124	971	-.944	981	-6.313	991	-7.387	1001	-6.628
1011	-5.357	1021	4.969	1031	4.682	1041	.774	1051	-6.815	1061	-5.998	1071	-4.366	1081	-3.708	1091	5.198	1101	.072
1111	-5.125	1121	-3.178	1131	-.801	1141	-.701	1151	5.255	1161	4.353	1171	1.203	1181	-5.913	1191	-3.908	1201	-2.147
1211	-1.947	1221	4.456	1231	3.864	1241	.906	1251	-4.653	1261	-2.784	1271	-1.725	1281	-1.492	1291	4.098	1301	.470
1311	-2.068	1321	-1.118	1331	-1.398	1341	-.044	1351	.283	1361	-2.084	1371	-.791	1381	-.122	1391	.159	1401	1.435
1411	.563	1421	.470	1431	.361	1441	.501	1451	2.245	1461	-.184	1471	-.028	1481	.236	1491	-.044	1501	2.317
1511	-1.331	1521	-5.500	1531	-1.582	1541	-.148	1551	5.198	1561	3.34	1571	.531	1581	-3.771	1591	-3.532	1601	-1.796
1611	-1.658	1621	-2.752	1631	-.312	1641	-.287	1651	-.186	1661	-.224	1671	6.179	1681	.254	1691	-6.362	1701	-4.073
1711	-1.293	1721	-1.004	1731	6.39	1741	-2.827	1751	-8.827	1761	-5.118								

RUN=	14	POINT=	130	ORIFICE (CP)															
11	2.155	21	1.150	31	-5.786	41	-9.225	51	-2.653	61	-1.837	71	5.288	81	4.647	91	1.820	101	-4.417
111	-4.340	121	-5.888	131	-4.825	141	5.812	151	5.404	161	3.525	171	-2.100	181	-5.116	191	-4.489	201	-4.417
211	6.293	221	2.956	231	3.353	241	-3.688	251	-2.114	261	-.803	271	4.938	281	4.661	291	2.170	301	-3.032
311	-3.047	321	-1.794	331	-1.444	341	3.628	351	4.516	361	2.425	371	-3.762	381	-2.129	391	-1.213	401	-.969
411	4.430	421	-.711	431	-2.301	441	-.711	451	-1.513	461	-.224	471	.277	481	-1.213	491	-.468	501	-.167
511	-.253	521	.091	531	-.783	541	.005	551	.162	561	.091	571	.305	581	-3.203	591	-1.413	601	-.697
611	-.597	621	-1.459	631	-2.325	641	-1.437	651	.055	661	.215	671	5.191	681	3.939	691	.887	701	-4.739
711	-2.962	721	-1.924	731	-2.051	741	-2.040	751	-1.402	761	-.127	771	.044	781	-.002	791	6.467	801	.055
811	-6.242	821	-3.600	831	-2.780	841	-1.197	851	6.911	861	-1.391	871	-6.550	881	-4.147	891	2.095	901	-.711
911	-7.412	921	-6.772	931	-1.957	941	-2.100	951	4.873	961	4.042	971	.420	981	-5.192	991	-7.555	1001	-5.880
1011	-4.734	1021	5.417	1031	4.114	1041	.091	1051	-5.444	1061	-6.309	1071	-4.519	1081	-4.720	1091	5.989	1101	.935
1111	-5.450	1121	-3.517	1131	-1.155	1141	-.754	1151	4.916	1161	4.672	1171	-.181	1181	-5.364	1191	-3.560	1201	-2.329
1211	-1.771	1221	3.212	1231	3.804	1241	.083	1251	-4.993	1261	-2.533	1271	-1.381	1281	-1.412	1291	3.991	1301	2.652
1311	-1.646	1321	-.805	1331	-1.366	1341	-.276	1351	.550	1361	-1.459	1371	-.509	1381	.145	1391	-.260	1401	1.313
1411	.736	1421	.441	1431	.347	1441	.472	1451	1.484	1461	-.898	1471	-.135	1481	-.089	1491	.036	1501	1.797
1511	-1.059	1521	-.455	1531	-1.801	1541	.162	1551	5.231	1561	5.080	1571	-.103	1581	-5.184	1591	-3.398	1601	-2.266
1611	-1.461	1621	-2.379	1631	-.631	1641	-.254	1651	-.354	1661	.073	1671	5.935	1681	-.015	1691	-6.379	1701	-4.115
1711	-.631	1721	-1.033	1731	6.350	1741	-.304	1751	-8.329	1761	-4.140								

APPENDIX CONTINUED.

RUN=	16	POINT=	131	ORIFICE (CP)																
11	3.456	21	1.679	31	-6.365	41	-8.685	51	-7.108	61	-2.955	71	6.006	81	5.015	91	1.999	101	-1.512	
111	-5.622	121	-6.335	131	-5.840	141	5.729	151	5.569	161	2.917	171	-1.352	181	-4.064	191	-3.990	201	-3.800	
211	5.773	221	7.383	231	-3.086	241	-2.358	251	-1.585	261	-2.769	271	5.715	281	5.001	291	2.684	301	-3.421	
311	-2.838	321	-1.600	331	-2.008	341	4.735	351	4.391	361	2.272	371	-2.240	381	-1.037	391	-1.381	401	-2.913	
411	4.248	421	1.498	431	-0.922	441	-0.879	451	-1.538	461	-2.264	471	1.040	481	-1.796	491	-1.066	501	-2.206	
511	-4.478	521	3.471	531	-0.522	541	-0.037	551	1.091	561	-0.066	571	-0.049	581	-3.314	591	-0.965	601	-0.321	
611	-6.622	621	-5.356	631	-2.828	641	-2.065	651	-1.744	661	-0.858	671	4.187	681	3.880	691	0.634	701	-5.390	
711	-5.310	721	-3.648	731	-3.192	741	-2.759	751	-1.313	761	-0.482	771	-0.482	781	-0.436	791	5.258	801	1.853	
811	-5.641	821	-5.037	831	-2.520	841	-2.384	851	6.146	861	4.748	871	-8.510	881	-6.369	891	2.557	901	-0.865	
911	-8.109	921	-8.725	931	-2.769	941	-2.712	951	5.736	961	4.318	971	1.612	981	-3.757	991	-6.835	1001	-6.506	
1011	-5.904	1021	5.650	1031	4.547	1041	1.125	1051	-5.103	1061	-6.849	1071	-4.859	1081	-4.415	1091	5.635	1101	0.309	
1111	-5.174	1121	-2.883	1131	-1.208	1141	-0.707	1151	5.564	1161	4.275	1171	0.481	1181	-5.561	1191	-3.757	1201	-2.168	
1211	-2.454	1221	4.791	1231	4.059	1241	0.945	1251	-5.921	1261	-2.667	1271	-1.484	1281	-1.515	1291	4.028	1301	0.992	
1311	-2.060	1321	-1.359	1331	-1.484	1341	-0.067	1351	-0.067	1361	-2.527	1371	-0.830	1381	-0.347	1391	-0.394	1401	1.023	
1411	0.151	1421	0.556	1431	0.447	1441	0.681	1451	2.051	1461	0.213	1471	0.509	1481	0.603	1491	0.182	1501	3.948	
1511	0.086	1521	-0.241	1531	-1.549	1541	-0.203	1551	5.344	1561	4.766	1571	-0.844	1581	-4.316	1591	-2.027	1601	-1.725	
1611	-1.637	1621	-1.976	1631	-1.071	1641	0.061	1651	-0.354	1661	-0.215	1671	6.602	1681	-2.253	1691	-5.637	1701	-4.127	
1711	-0.618	1721	-1.134	1731	5.898	1741	-1.926	1751	-9.712	1761	-6.366									

RUN=	16	POINT=	132	ORIFICE (CP)															
11	3.962	21	2.360	31	-6.208	41	-6.339	51	-6.077	61	-3.789	71	5.128	81	5.419	91	2.684	101	-0.263
111	-3.848	121	-5.154	131	-7.461	141	5.288	151	4.939	161	3.992	171	-1.196	181	-4.970	191	-4.081	201	-4.547
21	5.492	22	2.753	231	-4.270	241	-4.329	251	-7.724	261	-2.391	271	5.332	281	5.055	291	2.389	301	-3.556
311	-2.624	321	-1.939	331	-1.764	341	4.917	351	4.745	361	2.496	371	-3.361	381	-1.987	391	-1.385	401	-1.428
411	4.430	421	1.422	431	-1.886	441	-0.955	451	-1.843	461	-2.531	471	-0.024	481	-1.285	491	-0.282	501	-0.239
511	-0.194	521	0.219	531	-1.299	541	0.176	551	0.090	561	0.420	571	-0.425	581	-2.388	591	-0.640	601	-0.497
611	0.076	621	-5.992	631	-3.259	641	-0.629	651	-0.583	661	0.225	671	4.837	681	4.371	691	-1.255	701	-9.124
711	-5.207	721	-2.781	731	-2.337	741	-2.519	751	-0.811	761	-0.173	771	0.009	781	0.146	791	6.921	801	3.710
811	-3.543	821	-3.726	831	-2.075	841	-0.800	851	6.739	861	3.511	871	-9.192	881	-5.799	891	3.698	901	-1.613
911	-6.424	921	-6.181	931	-4.520	941	-3.647	951	4.930	961	2.911	971	-0.053	981	-4.806	991	-7.183	1001	-6.625
1011	-7.083	1021	4.930	1031	5.101	1041	0.792	1051	-4.090	1061	-5.651	1071	-4.262	1081	-4.591	1091	5.373	1101	0.892
1111	-4.864	1121	-2.530	1131	-3.561	1141	-1.141	1151	5.173	1161	4.300	1171	1.322	1181	-5.250	1191	-3.661	1201	-1.971
1211	-1.943	1221	4.868	1231	4.229	1241	0.243	1251	-3.930	1261	-3.058	1271	-1.470	1281	-1.735	1291	4.198	1301	0.632
1311	-2.544	1321	-1.268	1331	-1.143	1341	-0.333	1351	0.492	1361	-3.385	1371	-0.941	1381	-0.224	1391	-0.209	1401	0.975
1411	0.352	1421	0.212	1431	0.648	1441	0.663	1451	1.831	1461	-0.396	1471	0.507	1481	0.414	1491	0.181	1501	2.846
1511	-0.701	1521	-0.575	1531	-1.896	1541	0.230	1551	5.336	1561	5.840	1571	2.959	1581	-2.563	1591	-1.946	1601	-1.557
1611	-1.632	1621	-2.638	1631	-0.525	1641	-0.047	1651	-0.399	1661	-0.091	1671	6.481	1681	-4.487	1691	-9.129	1701	-3.619
1711	-0.575	1721	-1.066	1731	6.846	1741	-3.770	1751	-8.361	1761	-6.839								

PUN= 16 POINT= 133 OFFICE(CP)

11	1.566	2	1.220	3	.039	4	-.569	5	-.595	6	.486	7	1.617	8	1.655	9	1.287	10	.836
11	.351	12	.131	13	.170	14	1.723	15	1.657	16	1.250	17	.775	18	.357	19	.397	20	.335
21	1.739	22	1.439	23	.705	24	.588	25	-.174	26	.637	27	1.721	28	1.659	29	1.224	30	.568
31	.665	32	.673	33	.631	34	1.636	35	1.623	36	1.281	37	.364	38	.782	39	.769	40	.784
41	1.597	42	1.253	43	.700	44	.408	45	.507	46	.939	47	1.075	48	.644	49	.796	50	.905
51	.966	52	.966	53	.956	54	.931	55	1.003	56	.974	57	.925	58	.515	59	.771	60	.872
61	.931	62	.193	63	.656	64	.805	65	.966	66	.976	67	1.716	68	1.503	69	.448	70	.521
71	.192	72	.698	73	.687	74	.627	75	.883	76	.944	77	.984	78	.962	79	1.958	80	.912
81	.049	82	.389	83	.798	84	.621	85	1.961	86	.969	87	-.096	88	1.109	89	1.505	90	.995
91	-.100	92	-.515	93	-.511	94	.527	95	1.583	96	1.480	97	1.032	98	.251	99	-.100	100	-.022
101	.138	102	1.701	103	1.529	104	1.275	105	.349	106	.025	107	.257	108	.251	109	1.724	110	1.044
111	.202	112	.534	113	.669	114	.669	115	1.699	116	1.507	117	1.079	118	.247	119	.491	120	.665
121	.708	122	1.617	123	1.471	124	.982	125	.281	126	.623	127	.748	128	.782	129	1.568	130	1.029
131	.731	132	.797	133	.865	134	.950	135	.935	136	.700	137	.867	138	.935	139	.899	140	1.116
141	1.010	142	1.092	143	1.012	144	1.031	145	1.263	146	.925	147	1.001	148	1.039	149	1.018	150	1.408
151	.936	152	.909	153	.734	154	.943	155	1.785	156	1.746	157	1.382	158	.610	159	.663	160	.795
161	.697	162	.682	163	.921	164	.921	165	.975	166	.950	167	1.945	168	.895	169	-.143	170	.378
171	.785	172	.833	173	1.894	174	.476	175	-.564	176	.063								

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RUN= 16 POINT= 134 ORIFICE( CP )

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1	3.755	2	2.152	3	-5.352	4	-11.093	5	-12.302	6	-3.385	7	4.775	8	4.280	9	3.260	10	-1.272
11	-5.060	12	-4.011	13	-6.809	14	5.547	15	5.159	16	2.721	17	-1.738	18	-4.361	19	-4.186	20	-5.483
21	5.679	22	2.385	23	-3.618	24	-3.661	25	-9.155	26	-3.545	27	5.300	28	4.863	29	2.004	30	-3.210
31	-3.122	32	-2.117	33	-2.219	34	4.654	35	4.669	36	4.669	37	-3.423	38	-1.948	39	-1.261	40	-1.404
41	4.196	42	1.317	43	-1.576	44	-1.289	45	-1.834	46	-1.705	47	3.354	48	-2.020	49	-1.318	50	-1.633
51	-1.075	52	-1.144	53	-1.003	54	-1.101	55	2.229	56	1.114	57	0.043	58	-5.515	59	-1.115	60	-1.118
61	-0.731	62	-6.452	63	-3.145	64	-1.460	65	-6.28	66	-2.241	67	4.485	68	3.130	69	-3.366	70	-8.326
71	-5.636	72	-3.452	73	-2.500	74	-1.596	75	-5.537	76	-2.87	77	-1.139	78	-3.32	79	7.355	80	2.868
81	-5.024	82	-4.272	83	-7.08	84	-1.782	85	7.195	86	3.306	87	-10.012	88	-5.901	89	3.207	90	-3.301
91	-9.736	92	-10.395	93	-9.364	94	-3.136	95	4.653	96	3.379	97	-1.172	98	-4.381	99	7.918	100	-6.429
101	-4.458	102	5.512	103	4.495	104	1.317	105	-5.212	106	-6.772	107	-5.183	108	-5.470	109	5.483	110	1.159
111	-4.554	112	-3.623	113	-4.224	114	-2.864	115	5.240	116	4.796	117	1.088	118	-4.983	119	-3.265	120	-2.205
121	-1.290	122	4.558	123	4.154	124	1.102	125	-4.472	126	-2.604	127	-1.888	128	-1.093	129	4.029	130	1.342
131	-1.854	132	-1.062	133	-1.872	134	-1.125	135	0.090	136	-1.919	137	-0.953	138	1.52	139	0.028	140	1.242
141	-1.128	142	3.08	143	3.39	144	0.277	145	1.553	146	0.650	147	0.230	148	0.323	149	0.152	150	2.680
151	-0.716	152	-5.03	153	-2.641	154	-0.264	155	4.994	156	4.416	157	1.912	158	-3.559	159	-1.786	160	-1.962
161	-1.710	162	-2.742	163	-1.723	164	-0.213	165	-5.65	166	-5.15	167	6.680	168	-3.685	169	-10.553	170	-4.754
171	-5.565	172	-5.565	173	6.277	174	-4.553	175	-8.603	176	-6.377								

APPENDIX CONTINUED.

RUN=	17	POINT=	135	ORIFICE (CP)									
11	1.426	21	1.170	31	.034	41	-.915	61	.662	71	1.686	81	1.531
11	.084	12	.128	13	.185	14	1.720	16	1.293	17	.477	18	.318
21	1.728	22	1.363	23	.624	24	.330	26	.612	27	1.672	28	1.575
31	.604	32	.719	33	.689	34	1.626	36	1.273	37	.312	38	.558
41	1.563	42	1.390	43	.787	44	.855	46	.958	47	.990	48	.619
51	.921	52	1.029	53	.890	54	.935	56	.968	57	.902	58	.548
61	.816	62	.227	63	.672	64	.831	66	.919	67	1.620	68	1.166
71	.525	72	.627	73	.678	74	.767	76	.862	77	.952	78	.961
81	-.102	82	.413	83	.903	84	.876	86	.725	87	-.111	88	.182
91	-.207	92	-.517	93	.016	94	.693	96	1.516	97	1.038	98	.410
101	.115	102	1.700	103	1.608	104	1.068	106	.051	107	.359	108	.379
111	.295	112	.541	113	.837	114	.714	116	1.596	117	1.062	118	.270
121	.656	122	1.627	123	1.536	124	.974	126	.685	127	.734	128	.742
131	.700	132	.783	133	.817	134	.948	136	.774	137	.899	138	.965
141	.986	142	1.031	143	1.054	144	1.010	146	.815	147	1.010	148	1.027
151	.880	152	.914	153	.701	154	.938	156	1.721	157	1.485	158	.381
161	.766	162	.590	163	.900	164	.912	166	.960	167	1.850	168	1.102
171	.873	172	.876	173	1.910	174	.736	176	.196	177		178	

RUN=	17	POINT=	136	ORIFICE (CP)									
11	3.710	21	.403	31	-4.420	41	-6.081	61	-3.779	71	5.197	81	4.949
11	-5.775	12	-5.411	13	-5.819	14	5.109	16	2.384	17	-2.628	18	-4.828
21	5.459	22	3.157	23	-3.575	24	-2.963	26	-.690	27	5.546	28	4.657
31	-3.954	32	-2.482	33	-2.089	34	4.827	36	2.707	37	-3.838	38	-2.119
41	4.283	42	.774	43	-1.733	44	-.859	46	-.200	47	.960	48	-1.059
51	-.386	52	-.014	53	-.386	54	-.057	56	.144	57	-.129	58	-1.976
61	-.186	62	-5.011	63	-3.576	64	-.604	66	.022	67	5.682	68	4.042
71	-4.726	72	-3.929	73	-2.130	74	-1.583	76	-.433	77	-.114	78	.056
81	-7.311	82	-3.884	83	-.980	84	-2.062	86	6.616	87	-10.500	88	-6.298
91	-7.931	92	-11.439	93	-5.755	94	-3.822	96	4.095	97	-4.58	98	-5.369
101	-5.827	102	5.627	103	4.639	104	1.647	106	-6.213	107	-4.753	108	-4.767
111	-5.039	112	-2.963	113	-1.417	114	-.587	116	5.112	117	.716	118	-4.782
121	-2.004	122	4.752	123	4.456	124	-.439	126	-1.757	127	-1.492	128	-1.352
131	-1.975	132	-1.336	133	-1.570	134	-.153	136	-3.002	137	-1.025	138	-.589
141	-.050	142	.688	143	.781	144	.221	146	1.544	147	.766	148	.626
151	-.475	152	-.224	153	-1.205	154	.066	156	5.613	157	2.971	158	-3.720
161	-1.582	162	-1.746	163	-.375	164	-.526	166	-.123	167	6.606	168	.908
171	-2.060	172	-1.079	173	6.242	174	1.550	176	-6.488	177		178	

APPENDIX CONTINUED.

RUN=	17	POINT=	137	ORIFICE (CP)									
11	4.308	21	.781	31	-6.956	41	-7.509	51	-2.074	61	-3.502	71	5.415
11	-7.101	12	-6.344	13	-5.513	14	6.129	15	5.328	16	1.583	17	-1.288
21	5.503	22	.680	23	-4.012	24	-2.818	25	-9.23	26	-1.331	27	5.517
31	-2.745	32	-1.895	33	-1.972	34	4.784	35	4.369	36	1.533	37	-5.070
41	4.412	42	.315	43	-1.575	44	-6.58	45	-2.277	46	-1.143	47	.616
51	-3.15	52	-0.28	53	-2.72	54	-1.100	55	.043	56	.144	57	-4.29
61	-4.87	62	-5.148	63	-3.144	64	-1.879	65	-1.014	66	-1.171	67	5.306
71	-3.850	72	-2.540	73	-2.586	74	-2.392	75	-6.84	76	-1.126	77	.250
81	-7.106	82	-4.282	83	-8.66	84	-6.27	85	6.889	86	-5.24	87	-9.805
91	-7.101	92	-7.287	93	-2.663	94	-3.579	95	5.427	96	4.596	97	1.203
101	-5.469	102	6.257	103	5.126	104	2.434	105	-4.925	106	-4.867	107	-4.040
111	-3.822	112	-2.863	113	-1.374	114	-1.231	115	5.498	116	5.126	117	2.363
121	-1.947	122	4.845	123	3.880	124	.875	125	-3.890	126	-9.31	127	-1.243
131	-1.134	132	-1.149	133	-1.585	134	-3.09	135	.439	136	-2.520	137	-8.54
141	.470	142	.844	143	.735	144	.781	145	2.214	146	.268	147	.828
151	-.098	152	-.312	153	-1.871	154	-.098	155	5.688	156	3.789	157	1.160
161	-1.419	162	-2.425	163	-.752	164	-.073	165	.028	166	-.249	167	6.317
171	-1.607	172	-.978	173	6.569	174	-1.821	175	-7.305	176	-6.764		

RUN=	17	POINT=	138	ORIFICE (CP)									
11	1.785	21	1.137	31	-.730	41	-1.344	51	-.985	61	.179	71	1.898
11	-5.42	12	-2.56	13	-.157	14	2.101	15	1.947	16	1.363	17	-.027
21	2.037	22	1.244	23	.153	24	.323	25	.390	26	.648	27	1.947
31	.318	32	.491	33	.587	34	1.894	35	1.800	36	1.029	37	.062
41	1.815	42	.970	43	.486	44	.753	45	.665	46	.950	47	1.149
51	.844	52	.987	53	.918	54	.952	55	.964	56	1.007	57	.876
61	.887	62	.053	63	.143	64	.677	65	.928	66	.953	67	1.718
71	.026	72	.408	73	.365	74	.698	75	.815	76	.956	77	.908
81	-.633	82	.080	83	.870	84	.784	85	2.340	86	.245	87	-.895
91	-.458	92	-1.215	93	-1.198	94	.258	95	1.931	96	1.823	97	1.291
101	-.148	102	2.144	103	1.928	104	1.328	105	.224	106	-.117	107	-.003
111	-.000	112	.426	113	-.128	114	.660	115	2.013	116	1.917	117	1.493
121	.546	122	1.910	123	1.858	124	1.357	125	.197	126	.546	127	.735
131	.664	132	.642	133	.642	134	.954	135	.843	136	.911	137	.927
141	.945	142	1.077	143	1.026	144	1.044	145	1.422	146	1.171	147	1.053
151	.903	152	.906	153	.653	154	.853	155	1.758	156	1.628	157	.988
161	.636	162	.359	163	.731	164	.871	165	.941	166	.893	167	2.230
171	.746	172	.776	173	2.39	174	.888	175	-.916	176	-.336		

APPENDIX CONTINUED.

PUN=	17	POINT=	139	ORIFICE (CP)									
11	1.377	2	1.114	3	.389	4	-.226	5	-.226	6	.727	7	1.498
11	.374	12	.466	13	.410	14	1.569	15	1.464	16	1.348	17	.829
21	1.551	22	1.147	23	.619	24	.682	25	.395	26	.819	27	1.515
31	.676	32	.724	33	.760	34	1.460	35	1.443	36	1.146	37	.404
41	1.444	42	1.208	43	.810	44	.872	45	.751	46	.947	47	1.009
51	.974	52	1.033	53	.940	54	.940	55	.972	56	.987	57	.978
61	.909	62	.717	63	.740	64	.861	65	.990	66	.924	67	1.518
71	.630	72	.698	73	.705	74	.758	75	.975	76	.971	77	.938
81	.151	82	.580	83	.883	84	.934	85	1.694	86	1.061	87	1.142
91	.041	92	-.115	93	.154	94	.692	95	1.459	96	1.388	97	1.124
101	.325	102	1.510	103	1.425	104	1.012	105	.403	106	.267	107	.432
111	.450	112	.615	113	.864	114	.839	115	1.457	116	1.394	117	1.121
121	.720	122	1.451	123	1.306	124	1.079	125	.580	126	.755	127	.803
131	.824	132	.833	133	.827	134	.949	135	.946	136	.573	137	.852
141	.934	142	1.014	143	1.047	144	.998	145	1.090	146	1.076	147	1.040
151	.941	152	.925	153	.844	154	.949	155	1.547	156	1.542	157	1.354
161	.798	162	.710	163	.906	164	.952	165	.930	166	.952	167	1.599
171	.810	172	.897	173	1.620	174	.612	175	-.067	176	.343		

PUN=	17	POINT=	140	ORIFICE (CP)									
11	1.496	2	1.268	3	.153	4	-.233	5	-.090	6	.461	7	1.682
11	.569	12	.390	13	.198	14	1.759	15	1.684	16	1.346	17	.546
21	1.717	22	1.461	23	.615	24	.585	25	.600	26	.843	27	1.670
31	.719	32	.767	33	.686	34	1.618	35	1.612	36	1.306	37	.354
41	1.585	42	1.209	43	.757	44	.802	45	.745	46	.949	47	1.025
51	.883	52	.978	53	.955	54	.978	55	.986	56	.980	57	.819
61	.995	62	.378	63	.582	64	.869	65	.909	66	.981	67	1.607
71	.440	72	.571	73	.582	74	.707	75	.883	76	.916	77	.949
81	-.144	82	.391	83	.842	84	.855	85	1.886	86	.910	87	-.172
91	-.183	92	-.162	93	.257	94	.509	95	1.621	96	1.505	97	.829
101	.145	102	1.747	103	1.672	104	1.088	105	.302	106	1.117	107	.292
111	.247	112	.538	113	.774	114	.846	115	1.621	116	1.631	117	1.088
121	.633	122	1.591	123	1.534	124	.984	125	.462	126	.658	127	.717
131	.696	132	.774	133	.807	134	.634	135	1.039	136	.793	137	.871
141	.984	142	.945	143	1.016	144	.949	145	1.206	146	.984	147	.946
151	.853	152	.884	153	.829	154	.977	155	1.662	156	1.710	157	1.422
161	.705	162	.722	163	.802	164	.933	165	.950	166	.882	167	1.788
171	.802	172	.848	173	1.820	174	.594	175	-.296	176	.007		

APPENDIX CONTINUED.

RUN=	17	POINT=	141	OFFICE(CP)															
11	1.279	21	1.203	31	.535	41	.300	51	.375	61	.751	71	1.424	81	1.365	91	1.212	101	.969
111	.655	121	.625	131	.563	141	1.435	151	1.457	161	1.330	171	.838	181	.567	191	.743	201	.574
211	1.458	221	1.177	231	.660	241	.737	251	.680	261	.912	271	1.434	281	1.408	291	1.270	301	.773
311	.839	321	.886	331	.851	341	1.410	351	1.384	361	1.194	371	.546	381	.860	391	.881	401	.811
411	1.366	421	1.172	431	.842	441	.873	451	.678	461	.969	471	1.008	481	.822	491	.916	501	.949
511	.958	521	.976	531	.939	541	.955	551	.982	561	.969	571	1.008	581	.822	591	.862	601	.963
611	.953	621	.697	631	.757	641	.873	651	.932	661	.962	671	1.393	681	1.376	691	1.141	701	.335
711	.577	721	.808	731	.819	741	.762	751	.851	761	.945	771	.966	781	.963	791	1.526	801	1.295
811	.626	821	.683	831	.820	841	.903	851	1.539	861	1.092	871	.388	881	.495	891	1.221	901	.831
911	.160	921	.303	931	.712	941	.804	951	1.363	961	1.208	971	.959	981	.405	991	.270	1001	.299
1011	.503	1021	1.392	1031	1.315	1041	1.009	1051	.571	1061	.420	1071	.565	1081	.542	1091	1.427	1101	1.022
1111	.461	1121	.724	1131	.879	1141	.919	1151	1.411	1161	1.296	1171	.981	1181	.578	1191	.598	1201	.764
1211	.772	1221	1.391	1231	1.347	1241	.932	1251	.485	1261	.719	1271	.789	1281	.824	1291	1.341	1301	.930
1311	.782	1321	.865	1331	.885	1341	.974	1351	.945	1361	.762	1371	.884	1381	.917	1391	.949	1401	1.056
1411	.574	1421	1.028	1431	1.025	1441	1.008	1451	1.096	1461	1.019	1471	.999	1481	.985	1491	.980	1501	1.159
1511	.892	1521	.941	1531	.809	1541	.965	1551	1.418	1561	1.340	1571	.997	1581	.552	1591	.705	1601	.816
1611	.815	1621	.762	1631	.941	1641	.958	1651	.973	1661	.980	1671	1.506	1681	.644	1691	.569	1701	.619
1711	.899	1721	.506	1731	1.506	1741	.712	1751	.151	1761	.508								

RUN=	17	POINT=	142	OFFICE(CP)															
11	1.207	21	1.098	31	.862	41	.411	51	.212	61	.780	71	1.231	81	1.244	91	1.217	101	1.015
11	.807	12	.712	13	.693	14	1.302	15	1.286	16	1.219	17	.959	18	.879	19	.815	20	.709
21	1.290	22	1.207	23	.921	24	.880	25	.429	26	.775	27	1.283	28	1.276	29	1.182	30	.868
31	.879	32	.910	33	.903	34	1.253	35	1.248	36	1.148	37	.921	38	.917	39	.940	40	.936
41	1.232	42	1.092	43	.926	44	.943	45	.619	46	.943	47	1.034	48	.938	49	.976	50	.985
51	.978	52	.990	53	.978	54	.975	55	.998	56	.995	57	.988	58	.824	59	.912	60	.979
61	.997	62	.932	63	.863	64	.935	65	1.004	66	.999	67	1.242	68	1.105	69	1.076	70	.658
71	.774	72	.844	73	.887	74	.865	75	.943	76	.973	77	.951	78	.984	79	1.275	80	1.145
81	.766	82	.807	83	.951	84	.923	85	1.356	86	.971	87	.642	88	.681	89	1.175	90	.907
91	.651	92	.463	93	.673	94	.785	95	1.198	96	1.141	97	.816	98	.650	99	.517	100	.539
101	.673	102	1.284	103	1.195	104	.904	105	.629	106	.566	107	.729	108	.726	109	1.269	110	.952
111	.658	112	.855	113	.976	114	.846	115	1.268	116	1.213	117	.980	118	.705	119	.764	120	.836
121	.864	122	1.231	123	1.190	124	.972	125	.648	126	.826	127	.884	128	.907	129	1.221	130	.949
131	.836	132	.901	133	1.017	134	.965	135	.968	136	.778	137	.904	138	.953	139	.977	140	1.042
141	.968	142	.991	143	1.010	144	.988	145	1.120	146	.987	147	.979	148	1.008	149	1.004	150	1.072
151	.957	152	.961	153	.924	154	1.006	155	1.267	156	1.269	157	1.005	158	.778	159	.832	160	.907
161	.899	162	.950	163	.939	164	.978	165	.954	166	.980	167	1.258	168	.775	169	.569	170	.776
171	.822	172	.943	173	1.309	174	.789	175	.426	176	.669								

APPENDIX CONTINUED.

RUN=	20	POINT=	167	OPIFICE(CP)	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360	370	380	390	400	410	420	430	440	450	460	470	480	490	500	510	520	530	540	550	560	570	580	590	600	610	620	630	640	650	660	670	680	690	700	710	720	730	740	750	760	770	780	790	800	810	820	830	840	850	860	870	880	890	900	910	920	930	940	950	960	970	980	990	1000	1010	1020	1030	1040	1050	1060	1070	1080	1090	1100	1110	1120	1130	1140	1150	1160	1170	1180	1190	1200	1210	1220	1230	1240	1250	1260	1270	1280	1290	1300	1310	1320	1330	1340	1350	1360	1370	1380	1390	1400	1410	1420	1430	1440	1450	1460	1470	1480	1490	1500	1510	1520	1530	1540	1550	1560	1570	1580	1590	1600	1610	1620	1630	1640	1650	1660	1670	1680	1690	1700	1710	1720	1730	1740	1750	1760	1770	1780	1790	1800	1810	1820	1830	1840	1850	1860	1870	1880	1890	1900	1910	1920	1930	1940	1950	1960	1970	1980	1990	2000	2010	2020	2030	2040	2050	2060	2070	2080	2090	2100	2110	2120	2130	2140	2150	2160	2170	2180	2190	2200	2210	2220	2230	2240	2250	2260	2270	2280	2290	2300	2310	2320	2330	2340	2350	2360	2370	2380	2390	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500	2510	2520	2530	2540	2550	2560	2570	2580	2590	2600	2610	2620	2630	2640	2650	2660	2670	2680	2690	2700	2710	2720	2730	2740	2750	2760	2770	2780	2790	2800	2810	2820	2830	2840	2850	2860	2870	2880	2890	2900	2910	2920	2930	2940	2950	2960	2970	2980	2990	3000	3010	3020	3030	3040	3050	3060	3070	3080	3090	3100	3110	3120	3130	3140	3150	3160	3170	3180	3190	3200	3210	3220	3230	3240	3250	3260	3270	3280	3290	3300	3310	3320	3330	3340	3350	3360	3370	3380	3390	3400	3410	3420	3430	3440	3450	3460	3470	3480	3490	3500	3510	3520	3530	3540	3550	3560	3570	3580	3590	3600	3610	3620	3630	3640	3650	3660	3670	3680	3690	3700	3710	3720	3730	3740	3750	3760	3770	3780	3790	3800	3810	3820	3830	3840	3850	3860	3870	3880	3890	3900	3910	3920	3930	3940	3950	3960	3970	3980	3990	4000	4010	4020	4030	4040	4050	4060	4070	4080	4090	4100	4110	4120	4130	4140	4150	4160	4170	4180	4190	4200	4210	4220	4230	4240	4250	4260	4270	4280	4290	4300	4310	4320	4330	4340	4350	4360	4370	4380	4390	4400	4410	4420	4430	4440	4450	4460	4470	4480	4490	4500	4510	4520	4530	4540	4550	4560	4570	4580	4590	4600	4610	4620	4630	4640	4650	4660	4670	4680	4690	4700	4710	4720	4730	4740	4750	4760	4770	4780	4790	4800	4810	4820	4830	4840	4850	4860	4870	4880	4890	4900	4910	4920	4930	4940	4950	4960	4970	4980	4990	5000	5010	5020	5030	5040	5050	5060	5070	5080	5090	5100	5110	5120	5130	5140	5150	5160	5170	5180	5190	5200	5210	5220	5230	5240	5250	5260	5270	5280	5290	5300	5310	5320	5330	5340	5350	5360	5370	5380	5390	5400	5410	5420	5430	5440	5450	5460	5470	5480	5490	5500	5510	5520	5530	5540	5550	5560	5570	5580	5590	5600	5610	5620	5630	5640	5650	5660	5670	5680	5690	5700	5710	5720	5730	5740	5750	5760	5770	5780	5790	5800	5810	5820	5830	5840	5850	5860	5870	5880	5890	5900	5910	5920	5930	5940	5950	5960	5970	5980	5990	6000	6010	6020	6030	6040	6050	6060	6070	6080	6090	6100	6110	6120	6130	6140	6150	6160	6170	6180	6190	6200	6210	6220	6230	6240	6250	6260	6270	6280	6290	6300	6310	6320	6330	6340	6350	6360	6370	6380	6390	6400	6410	6420	6430	6440	6450	6460	6470	6480	6490	6500	6510	6520	6530	6540	6550	6560	6570	6580	6590	6600	6610	6620	6630	6640	6650	6660	6670	6680	6690	6700	6710	6720	6730	6740	6750	6760	6770	6780	6790	6800	6810	6820	6830	6840	6850	6860	6870	6880	6890	6900	6910	6920	6930	6940	6950	6960	6970	6980	6990	7000	7010	7020	7030	7040	7050	7060	7070	7080	7090	7100	7110	7120	7130	7140	7150	7160	7170	7180	7190	7200	7210	7220	7230	7240	7250	7260	7270	7280	7290	7300	7310	7320	7330	7340	7350	7360	7370	7380	7390	7400	7410	7420	7430	7440	7450	7460	7470	7480	7490	7500	7510	7520	7530	7540	7550	7560	7570	7580	7590	7600	7610	7620	7630	7640	7650	7660	7670	7680	7690	7700	7710	7720	7730	7740	7750	7760	7770	7780	7790	7800	7810	7820	7830	7840	7850	7860	7870	7880	7890	7900	7910	7920	7930	7940	7950	7960	7970	7980	7990	8000	8010	8020	8030	8040	8050	8060	8070	8080	8090	8100	8110	8120	8130	8140	8150	8160	8170	8180	8190	8200	8210	8220	8230	8240	8250	8260	8270	8280	8290	8300	8310	8320	8330	8340	8350	8360	8370	8380	8390	8400	8410	8420	8430	8440	8450	8460	8470	8480	8490	8500	8510	8520	8530	8540	8550	8560	8570	8580	8590	8600	8610	8620	8630	8640	8650	8660	8670	8680	8690	8700	8710	8720	8730	8740	8750	8760	8770	8780	8790	8800	8810	8820	8830	8840	8850	8860	8870	8880	8890	8900	8910	8920	8930	8940	8950	8960	8970	8980	8990	9000	9010	9020	9030	9040	9050	9060	9070	9080	9090	9100	9110	9120	9130	9140	9150	9160	9170	9180	9190	9200	9210	9220	9230	9240	9250	9260	9270	9280	9290	9300	9310	9320	9330	9340	9350	9360	9370	9380	9390	9400	9410	9420	9430	9440	9450	9460	9470	9480	9490	9500	9510	9520	9530	9540	9550	9560	9570	9580	9590	9600	9610	9620	9630	9640	9650	9660	9670	9680	9690	9700	9710	9720	9730	9740	9750	9760	9770	9780	9790	9800	9810	9820	9830	9840	9850	9860	9870	9880	9890	9900	9910	9920	9930	9940	9950	9960	9970	9980	9990	10000
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APPENDIX CONTINUED.

RUN= 20 POINT= 169 ORIFICE(CP)

11	.978	21	.915	31	.694	41	.600	51	.616	61	.663	71	.993	81	.978	91	.915	101	.647
111	.537	121	.506	131	.553	141	1.119	151	1.041	161	.820	171	.364	181	.380	191	.380	201	.396
211	1.796	221	1.261	231	.034	241	.333	251	.286	261	.474	271	3.038	281	3.054	291	2.456	301	.144
311	.018	321	.270	331	.301	341	2.696	351	2.680	361	2.062	371	-.334	381	.052	391	.439	401	.500
411	2.588	421	1.660	431	.021	441	.392	451	-.551	461	.500	471	.562	481	-.474	491	.098	501	.222
511	.176	521	.516	531	-.242	541	.037	551	.145	561	.129	571	.238	581	.361	591	.361	601	.377
611	.269	621	.354	631	.390	641	.415	651	.255	661	.280	671	2.628	681	2.751	691	.882	701	-1.195
711	-.999	721	-.384	731	.009	741	.390	751	.698	761	1.005	771	1.202	781	1.288	791	2.849	801	-.273
811	-2.511	821	-1.970	831	-.310	841	.022	851	2.751	861	-2.867	871	-5.154	881	-3.322	891	.933	901	.671
911	.439	921	.593	931	.609	941	.671	951	.980	961	.856	971	.578	981	.377	991	.315	1001	.485
1011	.532	1021	1.073	1031	.794	1041	.253	1051	-.226	1061	.052	1071	.315	1081	.408	1091	1.737	1101	-.040
1111	-.226	1121	.300	1131	.408	1141	.485	1151	2.912	1161	2.448	1171	.516	1181	-1.941	1191	-.473	1201	.022
1211	.161	1221	2.498	1231	2.011	1241	.145	1251	-2.006	1261	-.510	1271	.162	1281	.330	1291	2.398	1301	-.174
1311	-.527	1321	.263	1331	.196	1341	.633	1351	-1.182	1361	-1.552	1371	-.359	1381	.078	1391	.196	1401	.246
1411	-1.014	1421	-.208	1431	.129	1441	.229	1451	.448	1461	.364	1471	.246	1481	.364	1491	.398	1501	.628
1511	.601	1521	.696	1531	.655	1541	.818	1551	3.968	1561	3.887	1571	2.570	1581	.316	1591	.628	1601	.750
1611	.655	1621	.194	1631	-.309	1641	.696	1651	.750	1661	.818	1671	4.457	1681	1.905	1691	-2.250	1701	-1.246
1711	-1.449	1721	.139	1731	4.335	1741	-.444	1751	-5.238	1761	-3.663								

RUN= 20 POINT= 170 ORIFICE(CP)

11	1.036	21	.882	31	.419	41	.321	51	.251	61	.602	71	1.724	81	1.569	91	1.008	101	.335
111	-.100	121	.223	131	.223	141	3.771	151	3.701	161	2.579	171	.265	181	-.492	191	.111	201	.279
211	4.136	221	3.056	231	-.618	241	.125	251	-.562	261	.461	271	3.575	281	3.519	291	2.467	301	-.717
311	-.562	321	.027	331	.097	341	3.161	351	3.189	361	2.237	371	-1.333	381	-.644	391	-.065	401	-.051
411	3.175	421	1.838	431	-.492	441	-.078	451	-1.760	461	.280	471	.390	481	-1.209	491	-.382	501	-.078
511	-.203	521	.652	531	-.713	541	-.203	551	-.065	561	-1.06	571	1.176	581	.514	591	.487	601	.528
611	.418	621	.258	631	.674	641	.817	651	.609	661	.795	671	1.102	681	3.294	691	-.104	701	-4.203
711	-1.573	721	-.356	731	-.060	741	-.027	751	.740	761	1.036	771	1.102	781	1.014	791	5.344	801	-3.184
811	-.135	821	-1.792	831	.784	841	.411	851	5.585	861	-6.001	871	-8.906	881	-5.004	891	.914	901	.418
911	-.064	921	.129	931	.404	941	.639	951	1.658	961	1.176	971	.129	981	-.657	991	-.657	1001	-.009
1011	.156	1021	3.657	1031	2.761	1041	.694	1051	-1.870	1061	-1.539	1071	-.175	1081	.129	1091	3.973	1101	.983
1111	-1.842	1121	.074	1131	.018	1141	.652	1151	3.408	1161	2.775	1171	-.418	1181	-3.000	1191	-1.442	1201	-.395
1211	-.092	1221	2.888	1231	2.289	1241	-.349	1251	-3.226	1261	-1.368	1271	-.469	1281	-.214	1291	2.828	1301	-.799
1311	-1.198	1321	-.139	1331	-.034	1341	.595	1351	-1.758	1361	-2.582	1371	-.814	1381	-.199	1391	.011	1401	.310
1411	-1.593	1421	-.454	1431	-.019	1441	.131	1451	.295	1461	.400	1471	.505	1481	.580	1491	.670	1501	.481
1511	.529	1521	.590	1531	.711	1541	.771	1551	4.331	1561	4.282	1571	2.563	1581	.009	1591	.154	1601	.650
1611	.626	1621	.069	1631	-1.069	1641	.348	1651	.771	1661	.917	1671	5.759	1681	2.006	1691	-3.732	1701	-2.158
1711	-1.783	1721	-.694	1731	6.220	1741	.856	1751	-7.522	1761	-5.222								

APPENDIX CONTINUED.

RUN=	20	POINT=	171	NP1FICF (CP															
11	1.5011	21	.906	31	-.428	41	-.719	51	-1.125	61	.427	71	4.127	81	3.953	91	2.603	101	.239
11	-1.255	12	-.849	13	-.588	14	5.984	15	5.809	16	4.127	17	-.022	18	-1.763	19	-.922	20	-.733
21	5.621	22	3.793	23	-1.936	24	-.864	25	-3.098	26	-.037	27	4.925	28	4.852	29	3.111	30	-2.097
31	-1.966	32	-1.009	33	-.951	34	4.419	35	4.333	36	2.822	37	-2.625	38	-1.613	39	-.900	40	-1.057
41	4.319	42	2.151	43	-1.499	44	-.957	45	-4.721	46	-.486	47	.269	48	-2.354	49	-1.071	50	-.743
51	-1.000	52	.811	53	-1.413	54	-.658	55	-.472	56	-.615	57	1.681	58	1.381	59	1.153	60	.868
61	.811	62	.173	63	-.009	64	.468	65	.241	66	.604	67	5.207	68	3.789	69	-1.290	70	-7.979
71	-3.240	72	-1.664	73	-.972	74	-.473	75	1.216	76	1.170	77	1.080	78	.683	79	7.667	80	-3.965
81	-8.557	82	-4.158	83	-.122	84	.161	85	8.835	86	-6.811	87	-14.135	88	-6.562	89	1.267	90	-.258
91	-1.469	92	-.771	93	-.529	94	.740	95	4.004	96	3.092	97	.555	98	-2.211	99	-2.724	100	-1.384
101	-.842	102	5.772	103	4.859	104	1.638	105	-3.365	106	-3.736	107	-1.498	108	-1.056	109	5.358	110	1.196
111	-3.679	112	-1.028	113	-1.298	114	.854	115	4.646	116	3.762	117	-.016	118	-5.176	119	-3.536	120	-1.541
121	-.871	122	4.081	123	3.135	124	-.802	125	-5.282	126	-2.399	127	-1.298	128	-1.019	129	3.864	130	-1.422
131	-2.259	132	-.849	133	-.430	134	.577	135	-2.414	136	-4.275	137	-1.562	138	-.554	139	-.260	140	.531
141	-2.306	142	-.756	143	.050	144	.174	145	.112	146	.453	147	.763	148	.841	149	1.089	150	1.082
151	.819	152	.781	153	.180	154	.919	155	5.602	156	5.415	157	2.459	158	-2.876	159	-.797	160	-.421
161	-.484	162	-1.749	163	-3.176	164	-.847	165	-.196	166	.055	167	6.145	168	1.783	169	-6.107	170	-3.564
171	-.283	172	.230	173	9.635	174	1.169	175	-11.216	176	-7.672								

RUN=	20	POINT=	172	ORIFICE (CP)															
11	3.010	21	1.888	31	-2.091	41	-2.982	51	-2.675	61	-.386	71	7.251	81	7.128	91	4.992	101	.613
11	-3.290	12	-3.044	13	-2.614	14	7.973	15	7.866	16	5.469	17	-.770	18	-3.751	19	-2.829	20	-2.399
21	7.389	22	4.931	23	-3.121	24	-2.183	25	-5.595	26	-1.185	27	6.421	28	6.390	29	3.947	30	-3.213
31	-2.798	32	-1.922	33	-1.999	34	5.759	35	5.744	36	3.584	37	-4.254	38	-2.805	39	-1.913	40	-2.049
41	5.517	42	2.753	43	-2.442	44	-2.049	45	-7.607	46	-2.684	47	.261	48	-3.665	49	-1.944	50	-1.370
51	-1.542	52	.745	53	-2.110	54	-1.128	55	-.796	56	-.992	57	1.711	58	1.288	59	1.092	60	1.001
61	.745	62	-.762	63	-.931	64	-.246	65	-.318	66	.763	67	7.464	68	4.966	69	-2.996	70	-11.966
71	-6.298	72	-3.332	73	-2.480	74	-1.987	75	.703	76	1.051	77	.739	78	.438	79	10.538	80	-7.475
81	-11.018	82	-5.818	83	-.258	84	.258	85	10.790	86	-11.834	87	-19.508	88	-9.925	89	2.541	90	-.961
91	-5.460	92	-3.256	93	-1.339	94	.216	95	6.460	96	5.214	97	1.107	98	-4.947	99	-7.166	100	-5.007
101	-2.271	102	7.554	103	6.210	104	1.349	105	-6.532	106	-7.302	107	-4.026	108	-2.969	109	6.905	110	.503
111	-6.326	112	-2.396	113	-1.339	114	.382	115	5.984	116	4.685	117	-.795	118	-8.087	119	-5.521	120	-2.773
121	-1.912	122	5.233	123	3.887	124	-1.811	125	-8.395	126	-4.077	127	-2.500	128	-1.844	129	4.921	130	-2.697
131	-3.330	132	-1.630	133	-.333	134	.012	135	-3.486	136	-6.342	137	-2.632	138	-1.351	139	-.842	140	.455
141	-3.371	142	-1.400	143	-.547	144	-.185	145	.159	146	-.432	147	.176	148	.668	149	.734	150	1.601
151	.208	152	.235	153	-.813	154	-.965	155	7.941	156	7.252	157	2.516	158	-4.540	159	-3.108	160	-1.702
161	-1.901	162	-2.442	163	-2.033	164	-.481	165	-.044	166	-.030	167	11.112	168	3.644	169	-9.660	170	-5.668
171	-.561	172	.235	173	12.345	174	3.458	175	-14.860	176	-11.199								

RUN= 22 POINT= 137 ORIFICE(CP)

11	438	21	438	31	362	41	222	51	137	61	043	71	325	81	325	91	250	101	203
11	128	12	109	13	109	14	287	15	278	16	287	17	165	18	165	19	081	20	072
21	287	22	259	23	090	24	081	25	109	26	053	27	344	28	344	29	269	30	175
31	156	32	090	33	081	34	401	35	383	36	346	37	189	38	189	39	134	40	115
41	521	42	318	43	143	44	125	45	097	46	069	47	143	48	152	49	226	50	208
51	198	52	180	53	162	54	217	55	272	56	217	57	078	58	208	59	217	60	217
61	143	62	227	63	257	64	169	65	081	66	007	67	227	68	235	69	198	70	227
71	198	72	191	73	139	74	066	75	015	76	088	77	103	78	176	79	176	80	044
81	022	82	000	83	037	84	073	85	213	86	198	87	161	88	041	89	411	90	392
91	263	92	153	93	097	94	033	95	245	96	254	97	226	98	189	99	134	100	116
101	051	102	208	103	272	104	217	105	125	106	097	107	097	108	068	109	291	110	254
111	070	112	088	113	070	114	023	115	337	116	291	117	236	118	134	119	097	120	060
121	033	122	388	123	378	124	317	125	177	126	137	127	077	128	087	129	498	130	247
131	107	132	077	133	077	134	077	135	027	136	117	137	167	138	177	139	167	140	024
141	097	142	127	143	127	144	157	145	177	146	167	147	137	148	097	149	137	150	298
151	250	152	169	153	128	154	080	155	306	156	282	157	201	158	169	159	185	160	201
161	201	162	185	163	225	164	217	165	209	166	242	167	242	168	185	169	185	170	225
171	234	172	266	173	290	174	128	175	153	176	144								

RUN=	22	POINT=	138	ORIFICE (CP)																			
1 (	.677)	2 (	.665)	3 (	.455)	4 (	.350)	5 (	.256)	6 (	.245)	7 (	.642)	8 (	.630)	9 (	.537)	10 (	.466)
11 (	.315)	12 (	.326)	13 (	.291)	14 (	.653)	15 (	.630)	16 (	.618)	17 (	.443)	18 (	.361)	19 (	.396)	20 (	.350)
21 (	.677)	22 (	.595)	23 (	.431)	24 (	.408)	25 (	.326)	26 (	.280)	27 (	.653)	28 (	.723)	29 (	.583)	30 (	.396)
31 (	.373)	32 (	.338)	33 (	.303)	34 (	.614)	35 (	.626)	36 (	.488)	37 (	.270)	38 (	.259)	39 (	.327)	40 (	.258)
41 (	.673)	42 (	.488)	43 (	.316)	44 (	.327)	45 (	.235)	46 (	.201)	47 (	.488)	48 (	.155)	49 (	.362)	50 (	.408)
51 (	.362)	52 (	.591)	53 (	.178)	54 (	.350)	55 (	.327)	56 (	.339)	57 (	.132)	58 (	.362)	59 (	.385)	60 (	.385)
61 (	.372)	62 (	.430)	63 (	.393)	64 (	.329)	65 (	.010)	66 (	.220)	67 (	.813)	68 (	.621)	69 (	.430)	70 (	.320)
71 (	.336)	72 (	.284)	73 (	.275)	74 (	.193)	75 (	.220)	76 (	.384)	77 (	.338)	78 (	.411)	79 (	1.524)	80 (	.364)
81 (	.483)	82 (	.229)	83 (	.457)	84 (	.457)	85 (	1.324)	86 (	-1.979)	87 (	-2.317)	88 (	-.373)	89 (	.557)	90 (	-.637)
91 (	.419)	92 (	.327)	93 (	.190)	94 (	.224)	95 (	.591)	96 (	.580)	97 (	.545)	98 (	.465)	99 (	.305)	100 (	.259)
101 (	.236)	102 (	.603)	103 (	.591)	104 (	.534)	105 (	.408)	106 (	.282)	107 (	.282)	108 (	.282)	109 (	.649)	110 (	.523)
111 (	.350)	112 (	.327)	113 (	.259)	114 (	.224)	115 (	.660)	116 (	.591)	117 (	.431)	118 (	.259)	119 (	.255)	120 (	.259)
121 (	.250)	122 (	.601)	123 (	.526)	124 (	.277)	125 (	.152)	126 (	.177)	127 (	.214)	128 (	.239)	129 (	.639)	130 (	.239)
131 (	.214)	132 (	.189)	133 (	.252)	134 (	.227)	135 (	-.035)	136 (	.127)	137 (	.277)	138 (	.327)	139 (	.364)	140 (	.264)
141 (	.189)	142 (	.302)	143 (	.377)	144 (	.364)	145 (	.302)	146 (	.364)	147 (	.364)	148 (	.339)	149 (	.401)	150 (	.496)
151 (	.435)	152 (	.415)	153 (	.335)	154 (	.304)	155 (	.859)	156 (	.408)	157 (	.758)	158 (	.486)	159 (	.476)	160 (	.435)
161 (	.456)	162 (	.395)	163 (	.365)	164 (	.435)	165 (	.375)	166 (	.375)	167 (	1.554)	168 (	.418)	169 (	.083)	170 (	.264)
171 (	.123)	172 (	.355)	173 (	1.534)	174 (	.687)	175 (	-1.056)	176 (	-.976)								

APPENDIX CONTINUED.

RUN= 22 POINT= 139 OFFICE (CP)

11	1.117	21	.877	31	.486	41	.366	51	.201	61	.682	71	1.988	81	1.898	91	1.312	101	.336
11	-.054	121	.366	131	.426	141	.276	151	3.265	161	2.349	171	.201	181	-.445	191	.216	201	.381
21	3.761	221	2.484	231	-.520	241	.276	251	-.205	261	.516	271	3.641	281	3.565	291	2.454	301	-.730
31	-.580	321	-.039	331	.201	341	3.421	351	3.391	361	2.299	371	-1.437	381	-.728	391	-.093	401	-.063
41	3.347	421	1.753	431	-.565	441	-.152	451	-1.732	461	.188	471	.306	481	-1.245	491	-.447	501	-.093
51	-.152	521	.394	531	-.757	541	-.167	551	-.093	561	-.182	571	.158	581	.320	591	.276	601	.365
61	.184	621	.302	631	.877	641	.807	651	.537	661	.736	671	4.223	681	3.425	691	-.543	701	-4.816
71	-1.412	721	-.168	731	.114	741	.009	751	.807	761	1.124	771	1.053	781	.983	791	4.880	801	-2.985
81	-.532	821	-1.565	831	.678	841	.408	851	5.819	861	-5.755	871	-10.345	881	-4.722	891	.896	901	.335
91	-.046	921	.232	931	.542	941	.749	951	1.752	961	1.369	971	.055	981	-.875	991	-.653	1001	.070
101	.217	1021	3.346	1031	2.726	1041	.616	1051	-1.790	1061	-1.126	1071	-.034	1081	.203	1091	3.523	1101	.763
111	-1.465	1121	.055	1131	.232	1141	.601	1151	3.405	1161	2.756	1171	.158	1181	-2.897	1191	-1.362	1201	-.299
121	.011	1221	3.202	1231	2.544	1241	-.169	1251	-3.443	1261	-1.309	1271	-.474	1281	-.249	1291	3.025	1301	-.666
131	-1.389	1321	-.362	1331	.104	1341	.634	1351	-1.838	1361	-2.769	1371	-.923	1381	-.313	1391	-.089	1401	.072
141	-1.710	1421	-.554	1431	-.121	1441	.072	1451	.569	1461	.345	1471	.361	1481	.393	1491	.361	1501	.525
151	.551	1521	.693	1531	.577	1541	.823	1551	4.402	1561	4.467	1571	2.963	1581	-.344	1591	.201	1601	.784
161	.590	1621	.058	1631	-.733	1641	.369	1651	.654	1661	.849	1671	5.387	1681	2.327	1691	-2.963	1701	-1.952
171	-2.743	1721	-.344	1731	6.139	1741	-.409	1751	-7.709	1761	-.4973								

RUN= 22 POINT= 140 OFFICE (CP)

11	1.675	21	1.018	31	-.729	41	-1.237	51	-1.565	61	-.042	71	6.125	81	5.692	91	3.810	101	.391
11	-2.441	121	-1.998	131	-1.441	141	7.558	151	7.200	161	5.064	171	-.535	181	-2.379	191	-1.879	201	-1.655
21	6.901	221	4.616	231	-2.805	241	-1.924	251	-4.965	261	-.595	271	6.050	281	5.975	291	3.616	301	-3.103
31	-2.405	321	-1.894	331	5.234	341	5.146	351	5.146	361	3.209	371	-3.558	381	-2.281	391	-1.503	401	-1.782
41	5.175	421	2.416	431	-2.251	441	-1.650	451	-7.095	461	-1.884	471	.156	481	-3.367	491	-1.679	501	-1.253
51	-1.235	521	.669	531	-2.090	541	-.074	551	-.754	561	-1.033	571	1.741	581	1.256	591	1.139	601	.713
61	.611	621	-.077	631	.040	641	.378	651	.355	661	.775	671	6.038	681	4.626	691	-2.224	701	-9.285
71	-4.301	721	-1.921	731	-1.116	741	-.917	751	1.300	761	1.160	771	1.207	781	1.008	791	9.154	801	-4.885
81	-9.600	821	-4.873	831	-.205	841	.063	851	9.901	861	-.760	871	-18.854	881	-8.153	891	1.374	901	-.666
91	-2.641	921	-1.605	931	-.622	941	.611	951	5.878	961	4.646	971	.802	981	-3.805	991	-5.082	1001	-3.175
101	-2.059	1021	7.243	1031	5.966	1041	1.697	1051	-5.155	1061	-5.860	1071	-2.837	1081	-2.118	1091	6.524	1101	.934
111	-5.419	1121	-2.045	1131	-1.766	1141	.391	1151	5.717	1161	4.777	1171	-.357	1181	-7.297	1191	-5.082	1201	-2.500
121	-1.985	1221	4.768	1231	3.683	1241	-1.183	1251	-7.167	1261	-3.777	1271	-2.061	1281	-1.614	1291	4.688	1301	-2.077
131	-3.385	1321	-1.375	1331	-.593	1341	.077	1351	-3.210	1361	-5.667	1371	-2.380	1381	-1.120	1391	-.689	1401	.428
141	-3.066	1421	-1.295	1431	-.434	1441	-.130	1451	.524	1461	.540	1471	.859	1481	.811	1491	.891	1501	.855
151	.533	1521	.597	1531	.223	1541	.804	1551	6.437	1561	6.127	1571	2.905	1581	-2.870	1591	-1.852	1601	-.537
161	-.640	1621	-2.161	1631	-4.108	1641	-1.001	1651	-.176	1661	.172	1671	9.852	1681	2.247	1691	-8.323	1701	-4.430
171	-.241	1721	-.174	1731	11.000	1741	1.061	1751	-13.904	1761	-.9715								

APPENDIX CONTINUED.

RUN= 25 POINT= 147 OFFICE (CP)

11	.447	21	.429	31	.267	41	.115	51	.062	61	.039	71	.223	81	.231	91	.214	101	.135
11	.024	12	.016	13	.031	14	.110	15	.126	16	.135	17	.062	18	.028	19	.036	20	.025
21	.046	22	.038	23	.068	24	.073	25	.076	26	.033	27	.009	28	.012	29	.002	30	.082
31	.104	32	.113	33	.104	34	.088	35	.034	36	.044	37	.044	38	.061	39	.066	40	.072
41	.303	42	.042	43	.029	44	.051	45	.060	46	.030	47	.065	48	.029	49	.040	50	.030
51	.039	52	.016	53	.005	54	.029	55	.027	56	.040	57	.212	58	.082	59	.060	60	.055
61	.057	62	.000	63	.019	64	.004	65	.040	66	.153	67	.132	68	.110	69	.089	70	.084
71	.071	72	.051	73	.048	74	.026	75	.008	76	.007	77	.025	78	.036	79	.088	80	.070
81	.142	82	.080	83	.072	84	.078	85	.076	86	.062	87	.061	88	.073	89	.434	90	.435
91	.241	92	.143	93	.050	94	.009	95	.207	96	.219	97	.216	98	.168	99	.064	100	.011
101	.24	102	.111	103	.110	104	.111	105	.033	106	.047	107	.051	108	.039	109	.048	110	.048
111	.065	112	.058	113	.037	114	.041	115	.007	116	.037	117	.005	118	.090	119	.113	120	.104
121	.092	122	.084	123	.048	124	.005	125	.082	126	.100	127	.102	128	.104	129	.309	130	.101
131	.079	132	.092	133	.075	134	.025	135	.137	136	.018	137	.011	138	.005	139	.005	140	.121
141	.052	142	.022	143	.011	144	.002	145	.151	146	.093	147	.090	148	.085	149	.086	150	.004
151	.018	152	.002	153	.046	154	.247	155	.140	156	.122	157	.094	158	.073	159	.086	160	.072
161	.065	162	.044	163	.021	164	.010	165	.019	166	.026	167	.099	168	.068	169	.085	170	.091
171	.099	172	.094	173	.066	174	.064	175	.074	176	.067								

RUN= 25 POINT= 148 OFFICE (CP)

11	.501	21	.472	31	.289	41	.136	51	.089	61	.078	71	.295	81	.301	91	.273	101	.186
11	.083	12	.058	13	.069	14	.185	15	.205	16	.211	17	.111	18	.029	19	.007	20	.019
21	.118	22	.108	23	.030	24	.025	25	.001	26	.003	27	.066	28	.075	29	.060	30	.030
31	.051	32	.062	33	.050	34	.142	35	.125	36	.086	37	.015	38	.024	39	.022	40	.030
41	.339	42	.096	43	.016	44	.005	45	.015	46	.000	47	.035	48	.055	49	.077	50	.057
51	.078	52	.069	53	.021	54	.054	55	.054	56	.064	57	.174	58	.043	59	.019	60	.007
61	.011	62	.043	63	.055	64	.035	65	.001	66	.105	67	.173	68	.171	69	.148	70	.143
71	.128	72	.112	73	.095	74	.075	75	.050	76	.052	77	.029	78	.025	79	.153	80	.127
81	.062	82	.127	83	.113	84	.126	85	.128	86	.102	87	.100	88	.108	89	.481	90	.474
91	.268	92	.177	93	.076	94	.046	95	.280	96	.286	97	.269	98	.217	99	.091	100	.059
101	.056	102	.182	103	.186	104	.176	105	.079	106	.002	107	.010	108	.005	109	.120	110	.103
111	.025	112	.020	113	.006	114	.012	115	.063	116	.067	117	.033	118	.054	119	.071	120	.068
121	.054	122	.133	123	.091	124	.019	125	.053	126	.069	127	.063	128	.060	129	.335	130	.027
131	.042	132	.053	133	.031	134	.006	135	.121	136	.010	137	.020	138	.016	139	.032	140	.114
141	.336	142	.002	143	.019	144	.024	145	.125	146	.067	147	.053	148	.039	149	.042	150	.074
151	.058	152	.036	153	.003	154	.260	155	.177	156	.175	157	.154	158	.153	159	.142	160	.135
161	.120	162	.098	163	.081	164	.048	165	.039	166	.031	167	.158	168	.130	169	.123	170	.142
171	.139	172	.143	173	.119	174	.101	175	.114	176	.120								

APPENDIX CONTINUED.

RUN#	25	POINT= 149	ORIFICE (CP)									
110	.544	21	.503	31	.123	41	.169	51	.100	61	.083	71
111	.117	12	.091	131	.048	141	.241	151	.261	161	.251	171
210	.67	22	.158	231	.005	241	.002	251	.018	261	.018	271
310	.024	32	-.033	331	-.027	341	.171	351	.155	361	.116	371
410	.353	42	.117	431	.035	441	.019	451	.005	461	.013	471
510	.096	52	-.000	531	.027	541	.069	551	.074	561	.085	571
610	.014	62	.063	631	.092	641	.066	651	.031	661	-.080	671
710	.161	72	.148	731	.128	741	.103	751	.074	761	.074	771
810	.143	82	.155	831	.129	841	.154	851	.174	861	.136	871
910	.271	92	.174	931	.086	941	.049	951	.323	961	.331	971
1010	.071	102	.234	1031	.233	1041	.206	1051	.100	1061	.004	1071
1110	-.018	112	.011	1131	.005	1141	.004	1151	.109	1161	.103	1171
1210	-.045	122	.140	1231	.119	1241	.041	1251	-.051	1261	-.051	1271
1310	-.032	132	-.039	1331	-.014	1341	.020	1351	-.144	1361	-.002	1371
1410	-.040	142	.086	1431	.028	1441	.044	1451	-.134	1461	-.049	1471
1510	.093	152	.060	1531	.027	1541	-.328	1551	.174	1561	.191	1571
1610	.148	162	.133	1631	.012	1641	.071	1651	.072	1661	.053	1671
1710	.141	172	.176	1731	.159	1741	.136	1751	.161	1761	.048	1771

.345) 8(.349) 9(.323) 10(.228)
 .151) 18(.056) 19(.039) 20(.058)
 .121) 28(.126) 29(.101) 30(.002)
 .013) 38(.002) 39(.005) 40(.005)
 .016) 48(.062) 49(.089) 50(.080)
 .172) 58(.023) 59(.008) 60(.010)
 .182) 68(.196) 69(.178) 70(.178)
 .069) 78(.058) 79(.199) 80(.174)
 .131) 88(.123) 89(.518) 90(.504)
 .302) 98(.233) 99(.106) 100(.072)
 .005) 108(.010) 109(.165) 110(.133)
 .064) 118(.042) 119(.055) 120(.051)
 .047) 128(.049) 129(.346) 130(.023)
 .020) 138(.028) 139(.040) 140(.118)
 .033) 148(.030) 149(.025) 150(.067)
 .151) 158(.179) 159(.170) 160(.164)
 .201) 168(.159) 169(.181) 170(.180)

RUN#	25	POINT= 150	ORIFICE (CP)									
110	.554	21	.524	31	.323	41	.155	51	.103	61	.078	71
111	.116	12	.097	131	.095	141	.270	151	.289	161	.271	171
210	.198	22	.140	231	.017	241	.021	251	.033	261	.024	271
310	-.016	32	-.017	331	-.014	341	.188	351	.176	361	.133	371
410	.343	42	.127	431	.045	441	.030	451	.015	461	.030	471
510	.102	52	.007	531	.038	541	.079	551	.081	561	.094	571
610	.030	62	.080	631	.098	641	.075	651	.048	661	-.056	671
710	.178	72	.158	731	.144	741	.118	751	.087	761	.095	771
810	.147	82	.175	831	.142	841	.160	851	.192	861	.149	871
910	.284	92	.173	931	.085	941	.041	951	.356	961	.352	971
1010	.088	102	.241	1031	.260	1041	.231	1051	.108	1061	.023	1071
1110	-.035	112	.009	1131	.012	1141	.009	1151	.137	1161	.125	1171
1210	-.032	122	.182	1231	.133	1241	.049	1251	-.054	1261	-.041	1271
1310	-.035	132	-.026	1331	-.009	1341	.030	1351	-.147	1361	-.005	1371
1410	-.035	142	.027	1431	.034	1441	.049	1451	-.119	1461	-.035	1471
1510	.088	152	.071	1531	.045	1541	-.245	1551	.215	1561	.184	1571
1610	.162	162	.151	1631	.130	1641	-.094	1651	.099	1661	.089	1671
1710	.180	172	.184	1731	.183	1741	.158	1751	.175	1761	.169	1771

.378) 8(.367) 9(.339) 10(.244)
 .166) 18(.060) 19(.057) 20(.059)
 .146) 28(.158) 29(.123) 30(.011)
 .006) 38(.016) 39(.017) 40(.011)
 .022) 48(.063) 49(.097) 50(.095)
 .145) 58(.008) 59(.022) 60(.028)
 .218) 68(.190) 69(.203) 70(.199)
 .089) 78(.086) 79(.215) 80(.188)
 .144) 88(.145) 89(.516) 90(.516)
 .335) 98(.244) 99(.121) 100(.071)
 .030) 108(.021) 109(.194) 110(.158)
 .088) 118(.034) 119(.053) 120(.036)
 .037) 128(.034) 129(.361) 130(.041)
 .029) 138(.044) 139(.052) 140(.115)
 .022) 148(.009) 149(.010) 150(.076)
 .190) 158(.179) 159(.183) 160(.173)
 .215) 168(.171) 169(.177) 170(.198)

APPENDIX CONTINUED

PUNE=	29	POINT= 177	OPIFICF (CP)																
11	.514	21	.456	31	.205	41	.002	51	-.089	61	-.082	71	.259	81	.255	91	.223	101	-.097
111	-.054	121	-.065	131	-.063	141	.114	151	.136	161	.123	171	.001	181	-.104	191	-.108	201	-.100
21	.027	221	.002	231	-.163	241	-.144	251	-.123	261	-.108	271	-.038	281	-.037	291	-.046	301	-.182
31	-.189	321	-.190	331	-.174	341	.048	351	-.033	361	-.031	371	-.148	381	-.149	391	-.138	401	-.151
41	-.261	421	-.029	431	-.099	441	-.104	451	-.109	461	-.082	471	-.146	481	-.049	491	-.017	501	-.027
51	-.026	521	-.077	531	-.060	541	-.028	551	-.025	561	-.014	571	-.208	581	-.126	591	-.109	601	-.104
61	-.101	621	-.024	631	-.045	641	-.064	651	-.088	661	-.206	671	.049	681	.047	691	.012	701	.004
71	.002	721	-.008	731	-.011	741	-.024	751	-.032	761	-.030	771	-.041	781	-.049	791	.039	801	.021
81	.019	821	.039	831	.047	841	.043	851	.045	861	.030	871	.034	881	.044	891	.041	901	.021
91	.196	921	.029	931	-.102	941	-.122	951	.239	961	.236	971	.224	981	.145	991	.091	1001	-.055
101	-.059	1021	.111	1031	.110	1041	.097	1051	-.020	1061	-.092	1071	-.121	1081	-.119	1091	.022	1101	.007
111	-.143	1121	-.132	1131	-.129	1141	-.125	1151	-.042	1161	-.043	1171	-.058	1181	-.166	1191	-.187	1201	-.172
121	-.162	1221	.048	1231	.006	1241	-.061	1251	-.172	1261	-.171	1271	-.164	1281	-.159	1291	.270	1301	-.068
131	-.137	1321	-.143	1331	-.117	1341	-.078	1351	-.241	1361	-.071	1371	-.043	1381	-.046	1391	-.041	1401	-.161
141	-.095	1421	-.060	1431	-.044	1441	-.032	1451	-.147	1461	-.119	1471	-.124	1481	-.118	1491	-.121	1501	-.017
151	-.036	1521	-.051	1531	-.082	1541	.281	1551	.052	1561	.046	1571	.025	1581	.001	1591	.015	1601	.019
161	.013	1621	-.002	1631	-.009	1641	-.033	1651	-.032	1661	-.036	1671	.045	1681	.017	1691	.021	1701	.052
171	.059	1721	.064	1731	.031	1741	.026	1751	.036	1761	.036	1771		1781		1791		1801	

PUNE	29	POIIT=	178	ORIFICE (CL)															
11	.550	21	.480	31	.219	41	.016	51	-.064	61	-.063	71	.314	81	.313	91	.267	101	.136
111	-.021	121	-.035	131	-.029	141	.176	151	.204	161	.169	171	.046	181	-.079	191	-.077	201	-.069
21	.081	221	.056	231	-.123	241	-.106	251	-.095	261	-.083	271	.022	281	.017	291	.002	301	-.143
31	-.156	321	-.153	331	-.145	341	.020	351	.064	361	.000	371	-.127	381	-.114	391	-.100	401	-.113
41	.292	421	.004	431	-.077	441	-.077	451	-.085	461	-.060	471	-.174	481	-.026	491	-.001	501	-.006
51	-.002	521	-.058	531	-.043	541	-.008	551	-.003	561	.012	571	-.200	581	-.109	591	-.086	601	-.081
61	-.075	621	-.018	631	-.032	641	-.044	651	-.060	661	-.163	671	.094	681	.086	691	.047	701	.035
71	.030	721	.023	731	.017	741	.002	751	-.009	761	-.000	771	-.010	781	-.020	791	.090	801	.066
81	.058	821	.063	831	.072	841	.084	851	.096	861	.075	871	.066	881	.072	891	.527	901	.497
91	.157	921	.057	931	-.087	941	-.109	951	.293	961	.293	971	.262	981	.166	991	.002	1001	-.037
101	-.024	1021	.162	1031	.168	1041	.143	1051	.007	1061	-.091	1071	-.091	1081	-.091	1091	.073	1101	.041
111	-.124	1121	-.098	1131	-.106	1141	-.101	1151	.014	1161	-.003	1171	-.021	1181	-.151	1191	-.167	1201	-.146
121	-.134	1221	.073	1231	.029	1241	-.053	1251	-.156	1261	-.145	1271	-.138	1281	-.133	1291	.291	1301	-.055
131	-.125	1321	-.125	1331	-.097	1341	-.057	1351	-.233	1361	-.063	1371	-.043	1381	-.028	1391	-.023	1401	-.161
141	-.084	1421	-.046	1431	-.029	1441	-.012	1451	-.142	1461	-.106	1471	-.108	1481	-.101	1491	-.095	1501	-.024
151	-.024	1521	-.038	1531	-.057	1541	.021	1551	.094	1561	-.080	1571	.060	1581	.039	1591	.048	1601	.051
161	.044	1621	.042	1631	.022	1641	-.001	1651	-.006	1661	-.004	1671	.093	1681	.009	1691	.065	1701	.081
171	.042	1721	.104	1731	.069	1741	.054	1751	.069	1761	.070	1771		1781		1791		1801	

APPENDIX CONTAINED.

DATE	20	POINT	100	OFFICE (CP)	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	1219	1220	1221	1222	1223	1224	1225	1226	1227	1228	1229	1230	1231	1232	1233	1234	1235	1236	1237	1238	1239	1240	1241	1242	1243	1244	1245	1246	1247	1248	1249	1250	1251	1252	1253	1254	1255	1256	1257	1258	1259	1260	1261	1262	1263	1264	1265	1266	1267	1268	1269	1270	1271	1272	1273	1274	1275	1276	1277	1278	1279	1280	1281	1282	1283	1284	1285	1286	1287	1288	1289	1290	1291	1292	1293	1294	1295	1296	1297	1298	1299	1300	1301	1302	1303	1304	1305	1306	1307	1308	1309	1310	1311	1312	1313	1314	1315	1316	1317	1318	1319	1320	1321	1322	1323	1324	1325	1326	1327	1328	1329	1330	1331	1332	1333	1334	1335	1336	1337	1338	1339	1340	1341	1342	1343	1344	1345	1346	1347	1348	1349	1350	1351	1352	1353	1354	1355	1356	1357	1358	1359	1360	1361	1362	1363	1364	1365	1366	1367	1368	1369	1370	1371	1372	1373	1374	1375	1376	1377	1378	1379	1380	1381	1382	1383	1384	1385	1386	1387	1388	1389	1390	1391	1392	1393	1394	1395	1396	1397	1398	1399	1400	1401	1402	1403	1404	1405	1406	1407	1408	1409	1410	1411	1412	1413	1414	1415	1416	1417	1418	1419	1420	1421	1422	1423	1424	1425	1426	1427	1428	1429	1430	1431	1432	1433	1434	1435	1436	1437	1438	1439	1440	1441	1442	1443	1444	1445	1446	1447	1448	1449	1450	1451	1452	1453	1454	1455	1456	1457	1458	1459	1460	1461	1462	1463	1464	1465	1466	1467	1468	1469	1470	1471	1472	1473	1474	1475	1476	1477	1478	1479	1480	1481	1482	1483	1484	1485	1486	1487	1488	1489	1490	1491	1492	1493	1494	1495	1496	1497	
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APPENDIX CONTINUED.

PU=	29	POINT=	1A1	ORIFICE(CP)																
11	.603	21	.533	31	.242	41	.035	51	-.050	61	-.044	71	.398	81	.393	91	.338	101	.190	
111	.018	121	-.003	131	-.002	141	.261	151	.287	161	.223	171	.075	181	-.050	191	-.041	201	-.030	
21	.177	221	.130	231	-.090	241	-.066	251	-.071	261	-.060	271	.109	281	.101	291	.065	301	-.113	
31	-.114	321	-.113	331	-.097	341	.155	351	.140	361	.057	371	-.103	381	-.082	391	-.059	401	-.072	
41	.340	421	.053	431	-.042	441	-.032	451	-.054	461	-.032	471	-.178	481	-.037	491	.014	501	.021	
51	.030	521	-.041	531	-.037	541	.008	551	.017	561	.034	571	-.165	581	-.084	591	-.055	601	-.045	
61	-.041	621	.014	631	.006	641	-.006	651	-.024	661	-.122	671	.138	681	.126	691	.105	701	.081	
71	.078	721	.064	731	.053	741	.039	751	.021	761	.041	771	.027	781	.032	791	.142	801	.134	
81	.106	821	.104	831	.107	841	.124	851	.137	861	.136	871	.106	881	.102	891	.580	901	.549	
91	.234	921	.069	931	-.075	941	-.091	951	.376	961	.375	971	.332	981	.213	991	.055	1001	-.007	
101	-.016	1021	.256	1031	.247	1041	.219	1051	.039	1061	-.083	1071	-.057	1081	-.051	1091	.168	1101	.114	
111	-.090	1121	-.072	1131	-.082	1141	-.080	1151	.097	1161	.084	1171	.033	1181	-.124	1191	.335	1201	-.116	
121	-.101	1221	.146	1231	.097	1241	-.005	1251	-.138	1261	-.117	1271	-.102	1281	-.100	1291	.000	1301	-.026	
131	-.097	1321	-.084	1331	-.070	1341	-.033	1351	-.231	1361	-.080	1371	-.039	1381	-.015	1391	.000	1401	-.157	
141	-.085	1421	-.034	1431	-.016	1441	.003	1451	-.124	1461	-.094	1471	-.087	1481	-.070	1491	-.067	1501	.002	
151	.006	1521	-.002	1531	-.016	1541	-.020	1551	.139	1561	.125	1571	.101	1581	.080	1591	.095	1601	.091	
161	.085	1621	.074	1631	.066	1641	.043	1651	.035	1661	.042	1671	.143	1681	.110	1691	.110	1701	.131	
171	.145	1721	.146	1731	.103	1741	.093	1751	.118	1761	.110									

RUN=	29	POINT=	1A2	ORIFICE(CP)																	
11	.613	21	.547	31	.235	41	.037	51	-.050	61	-.047	71	.412	81	.407	91	.353	101	.192		
111	.021	121	.002	131	-.006	141	.284	151	.300	161	.257	171	.088	181	-.038	191	-.030	201	-.021		
21	.196	221	.144	231	-.087	241	-.059	251	-.069	261	-.053	271	.126	281	.125	291	.081	301	-.105		
31	-.100	321	-.101	331	-.092	341	.169	351	.155	361	.067	371	-.099	381	-.073	391	-.052	401	-.063		
41	.350	421	.057	431	-.037	441	-.024	451	-.049	461	-.022	471	-.154	481	-.029	491	.014	501	.028		
51	.037	521	-.042	531	-.034	541	.011	551	.023	561	.039	571	-.161	581	-.070	591	-.045	601	-.039		
61	-.037	621	.018	631	.015		.007	651	-.013	661	-.116	671	.148	681	.137	691	.115	701	.094		
71	.089	721	.071	731	.064		.042	751	.033	761	.052	771	.045	781	.026	791	.150	801	.153		
81	.113	821	.110	831	.112	841	.131	851	.137	861	.143	871	.120	881	.106	891	.594	901	.555		
91	.261	921	.088	931	-.073	941	-.098	951	.397	961	.392	971	.348	981	.231	991	.071	1001	.002		
101	.015	1021	.279	1031	.269	1041	.225	1051	.062	1061	-.059	1071	-.053	1081	-.052	1091	.188	1101	.130		
111	-.095	1121	.159	1131	-.085	1141	-.073	1151	.116	1161	-.113	1171	.046	1181	-.052	1191	-.124	1201	-.103		
121	-.089	1221	.159	1231	.107	1241	.012	1251	-.121	1261	-.113	1271	-.100	1281	-.093	1291	.346	1301	-.024		
131	-.089	1321	-.077	1331	-.069	1341	-.021	1351	-.249	1361	-.068	1371	-.032	1381	-.009	1391	.004	1401	-.160		
141	-.079	1421	-.038	1431	-.010	1441	.009	1451	-.125	1461	-.084	1471	-.078	1481	-.069	1491	-.064	1501	.002		
151	.008	1521	.010	1531	-.005	1541	-.031	1551	.149	1561	.123	1571	.107	1581	.087	1591	.110	1601	.099		
161	.094	1621	.092	1631	.080	1641	.059	1651	.052	1661	.042	1671	.155	1681	.117	1691	.127	1701	.137		
171	.149	1721	.161	1731	.112	1741	.107	1751	.127	1761	.126										